Feeding Africa:
An Action Plan for African Agricultural Transformation
Summaries Work streams 1-25

Introduction

Africa can and must feed itself and transform its economies, by targeting agriculture as a source of wealth and employment. In October 2015, African leaders met in Dakar, Senegal at a high-level conference called to kick-start agriculture as an engine of growth by mapping out an ambitious action plan.

There is real hope for breaking the current pattern of poverty and malnutrition, building on dynamic models of countries that have succeeded in making the transition. Adopting a commercial approach to agriculture will be the key to transforming Africa and the livelihoods of its people. “Agriculture must be modernized. That’s what will transform Africa,” said President of the African Development Bank, (AfDB) Dr Akinwumi Adesina, on the opening day of the conference. Together with Prime Minister of the Democratic Republic of Congo, Mr. Ponyo Mapon, and President of the Republic of Senegal, HE President Macky Sall, Dr. Adesina outlined a shared vision for African agricultural transformation, based on the following goals:

- Eliminating extreme poverty
- Ending hunger and malnutrition
- Turning Africa into a net food exporter
- Moving Africa to the top of global value chains.

The roadmap for achieving these objectives, developed during the three-day conference, will involve a two-pronged approach based on raising food productivity and reorganizing markets to create greater incentives and better trade conditions. Adopting a joint strategy that includes all African countries will be critical to success across a whole range of areas, including improved finance, infrastructure, trade and value chain development. Involving women and young people in all initiatives will also be crucial, making African agriculture, and the promise it holds for the future, more inclusive. Investing in nutrition will be a cornerstone of the roadmap, enabling Africa to harness its emerging generation of human capital for economic development.

The Action Plan for African Agricultural Transformation was developed by the Presidential Panel, made up of African leaders and key figures from the private sector, as well as development partners, including the African Union, AfDB, The United Nations Food and Agriculture Organization, the United Nations Economic Commission for Africa and the World Bank. As well as taking inspiration from success stories within
Africa itself, the roadmap draws on other regions where targeting agriculture has resulted in strong economic growth. For example, China lifted 400 million people out of poverty in ten years by investing heavily in agriculture, while Brazil used a hi-tech approach to boost food production on a massive scale.

Research results presented at the conference contributed to the roadmap. Currently, around a third of all calories consumed in Africa are imported, and the continent’s annual food import bill stands at a massive US$35 billion. Yet there is strong potential for tapping burgeoning African food markets for high-value perishable food products, such as poultry, dairy, horticultural produce and meat, value chains that will also create jobs for rural dwellers in processing, packaging and distribution.

A series of ministerial dialogues held throughout the three-day event, together with work stream sessions to explore 26 different themes, drew up a programme of challenges to be faced and practical solutions to tackle them. The topics covered were innovative financing, policy, agro-input supply, research and development, regional and international trade, marketing and agribusiness, logistics, youth in agribusiness, nutrition, climate smart agriculture, strengthening farmer organizations, women in agriculture, extension, blue economy, export crops, cereals, oil grains, roots and tubers, livestock and dairy, agricultural insurance, sustainable land management, science innovations, agricultural industrialization, mechanization, agricultural enterprise processing zones and agricultural corridors, and strengthening agricultural public institutions. This report describes the outcomes of these sessions, which provided invaluable guidance for the Action Plan as well as endorsing its strategy. The work stream descriptions also include examples of success stories of agricultural transformation across Africa. These provide clear evidence of the massive potential that exists on the continent.

This report provides background information for the Action Plan for African Agricultural Transformation, which lists the goals, objectives, activities, responsible institutions and timelines. The Action Plan will be implemented with AfDB as the focal point, working closely with co-conveners and development partners. It will form the basis of new platforms for cooperation, innovative investments and new approaches for the development of agriculture on the continent. Without this well thought-out action plan and its effective implementation, it will be ‘business as usual’, with a continuing downward spiral of rising food imports and deepening poverty. This clearly cannot be allowed to happen. As the President of AfDB said in his closing speech: “Africa counts on us; great opportunities are ahead of us to feed Africa so let us rise up and lead”.

2
Work stream 1: Policies and regulatory frameworks

Quote: Good policies may not be the solution for every problem but bad policies can create problems for everything else.

Setting the scene
Good policies and regulations can make agriculture more competitive, which can in turn help to upgrade value chains, raise incomes and bring growth to an entire economy. In the past, policies emphasizing industrial or market-driven growth caused African countries to lose steam and significantly reduced per capita GDP. These policies caused agriculture to decline rapidly and led to rapid and persistent poverty. As a result of the Comprehensive Africa Agriculture Development Programme (CAADP), economic policies are now more agriculture-friendly and balanced. This represents both a qualitative and a philosophical change: a move towards Africa making decisions on its own.

Today, inflation rates are in the single digits. Export earnings are up significantly and savings and investment have increased as well. Governance has improved across the continent. Nevertheless, further policy improvements are needed to sustain and accelerate the ongoing recovery and to foster economic transformation. There are also risks of policy reversal, which would undermine any progress made so far. For example, a lack of institutional memory, new leadership or economic growth may lead to policy setbacks. A return to failed policies of the past will produce the same disappointing performance as before and scuttle recovery efforts.

Opportunities
Today, African countries are growing more quickly and over longer periods than ever before. The growth is broad and sustained. Countries have nearly doubled their investment in agriculture over the past 6 years. Economic growth ranges between 23-64 percent. Poverty is down between 23-36 percent and nutrition has improved by between 20-43 percent (IFPRI). Intra-African and intra-regional trade shows significant potential for growth and this could have sizeable positive effects on regional food security and resilience. Urbanization, the rise of the middle class and changes in employment have resulted in changing consumption patterns, with a decreasing share of staples and a larger share of purchased and processed food in the diets of both the poor and non-poor. Although imports are increasing, domestically produced food represents a larger share of diets. These trends, which are likely to continue, present opportunities for expanding value chains to meet sharply rising demand. There are large potential gains in terms of employment and income growth if domestic agribusiness firms can be supported to grow and increase their productivity. Good
policies will be key to supporting continued economic progress in Africa in the coming years.

Success story

The adoption of CAADP in 2003 signalled the recognition by African leaders of the central role of agriculture in development and their commitment to increasing investment in the sector. In Malabo in 2014, AU Leaders renewed their commitment to CAADP and outlined a broader and more transformational agenda. In addition to increased investment and accelerated agricultural growth, the Malabo Declaration on Accelerated Agricultural Growth and Transformation commits countries to promoting inclusive growth that caters for the needs of the young and women, to ending hunger and reducing malnutrition, to boosting agribusiness growth and expanding intra-African trade and to enhancing resilience to a changing climate.

The way forward

- Policies are needed to reduce obstacles to trade and to support the development of value chains; technical innovation policies are needed for infrastructure development and capacity building; NRM policies should focus on soil fertility and land tenure issues; irrigation policies are needed to protect water rights and policies are needed to enforce the legal and social rights of people, particularly women and youth.
- Policies and regulations need to respond to local obstacles and opportunities; these are situation and geographically specific and may evolve over time. Thus, it is critical to invest in strong, local policy analysis and expertise to minimize the risk of policy reversal. Nevertheless, there are useful lessons to be gleaned from the experiences of other countries as to the characteristics of policies that are conducive to stimulating and sustaining growth.
- Good policies are critical for agricultural transformation, but policies alone cannot do it all. Strong institutions, leadership and the capacity to implement the policies are critical.
- Policies should have clear targets and milestones and be subject to rigorous technical, social and environmental reviews. They should be based on inclusive consultation and dialogue.
- Creating good policies requires:
  - Better data systems and harmonized data platforms that include information on production, trade, etc.
  - Access to expertise; this involves building and maintaining a network of experts, rather than relying on one-off consultations. Collective knowledge is invaluable.
  - Effective and accessible knowledge and information management systems
Governments need to create opportunities for public-private partnerships. Bankability/insurability should be part of the financial strategy of agricultural policy.

AfDB can help to create the political will and commitment that countries need to address policy issues.

We need to integrate policy-making by involving relevant ministries (e.g. heath, nutrition, agriculture) to ensure against conflicting policies made in a vacuum.

Policies should be legislated rather than ‘administrative’ to protect them against being changed at the whim of new governments.

Work stream 2: Agricultural input supply

Quote: Using improved seed and fertilizer can increase yields by up to 300 per cent. Namangi Ngongi, Syngenta

Setting the scene

Africa’s crop yields remain dramatically below the global average, in spite of a significant increase in agricultural production in many sub-Saharan countries over the past decade. This upsurge in output has been mainly driven by the greater use of higher-yielding seed and improved fertilizer, highlighting the fact that this approach will be key to raising production levels and growing more food for the continent – just as it was in the Green Revolutions that dramatically increased food production in Latin America, India and Southeast Asia.

Recent successes in Africa clearly show that public and private sector players need to work together to find innovative ways of offering African farmers better access to high quality inputs such as fertilizer and improved seed, in an effort to restore the continent’s depleted soils and to grow the best possible varieties for the prevailing conditions. The most dramatic gains have been achieved in countries that have encouraged the development of private, local agribusinesses, such as seed companies, fertilizer importers and village-based agro-dealers.

Opportunities

Using good quality inputs is critical to increasing productivity and food production. Adopting improved seed and fertilizer can increase yields by up to 300 percent; this approach is far more effective in increasing output than simply cultivating more land. The use of improved seed and fertilizer has developed rapidly as a result of a shift toward private involvement in the African input supply sector since the beginning of the new millennium. In a number of countries, dynamic local entrepreneurs now dominate the seed industry, helping to address previous problems of cost, unreliable supplies, late delivery and inappropriate products. While average fertilizer use on the
continent is still just 12 kg of nutrients per hectare, the number of countries where farmers apply more than 20 kg/ha has increased. The goal is to raise this to an average of at least 50 kg/ha.

Providing support and enabling conditions for local seed and fertilizer companies has emerged as a winning formula. For seed suppliers, improved credit and start-up loans are practical solutions that have been shown to work. Fertilizer companies that have strong policy support are more likely to produce products that are well suited to local crops and conditions.

Promoting the expansion of agro-dealer networks can improve input services in remote rural areas, providing business development services, as well as the products themselves, ensuring that farmers have regular access to good seed and fertilizer at prices and in quantities that they can afford. Other strategies that have proven successful include increasing farmer awareness of improved input technologies and promoting the use of ICTs, such as mobile phones, Internet platforms and video, to share knowledge about farming techniques and impacts. Strengthening research capacity, harnessing innovative financing solutions and tapping into private sector-led partnerships – such as Grow Africa – can do much to drive effective agricultural input development and use by African farmers. An improved policy environment is crucial to creating the right conditions for this public-private sector partnership to grow.

Success stories

- Over the past 8 years, the Alliance for a Green Revolution (AGRA) and other players have teamed up with African governments to improve access to quality inputs for farmers. The most successful outcomes have been based on a value chain approach. In some cases, yields of staple food crops have doubled and incomes for millions of Africa farmers boosted as a result. To date, as a result of AGRA-led initiatives, start-up grants have been made available to more than 100 seed companies in 18 African countries. In 2014, these produced a total of more than 125 000 MT of improved certified seed for staple food crops.
- Important steps are being taken to fine-tune fertilizers to meet the specific needs of soils and crops. In Kenya, local company MEA Fertilizer & Co. has developed a special blend for grain legumes.
- Small packs of improved seed and fertilizer are allowing farmers to trial inputs and purchase them in quantities that they can afford.
- In a number of countries, the emergence of local fertilizer companies is helping to lower supply costs and improve distribution. In Ghana, the number of local companies increased from 12 to 38 between 2008 and 2014. In Tanzania, the increase was from 6 to 46 over the same period.
• The MFarms app, developed in Ghana, is helping agro-dealers to reach more farmers through use of ICTs to create awareness of inputs and how to use them. Similar schemes are operating in Kenya, Nigeria and Rwanda.

• Ethiopia’s Ethiosis programme encourages companies to conduct soil testing for farmers and share the results with national institutions for better planning and strategic use of fertilizer blends, producing tangible impacts.

• In 2007, Rwanda embarked on an inputs programme and was immediately rewarded with a bumper harvest. Now the system of making quality seed and fertilizer available to farmers is entrenched and there are agro-dealers throughout the country, providing products and other related services. The idea of targeting fertilizer with plant-specific nutrients is starting to take hold, especially for maize.

• With 82 million hectares of arable land in Nigeria, there was massive potential for using inputs - not least because the population has more than doubled to 170 million since 1991. Nigeria’s agricultural transformation agenda between 2011 and 2014 successfully reached a total of 14.3 million farmers with 1.3 million MT of fertilizer, 102 703 MT of improved rice seeds, and 67 991 MT of improved maize seeds, among many other crops. Government support also helped to increase the previously small seed production of 5 000 MT to its current level of 170 000 MT, and the number of seed companies from 11 to 134.

• Innovative solutions pioneered by the Africa Fertilizer Agri-business Partnership (AFAP), piloted in Ghana, Mozambique and Tanzania since 2012, have taken a three-pronged approach involving offering credit guarantees for fertilizer suppliers, matching grants for agro-dealers and providing technical support for farmers’ cooperatives and agro-dealers. Results have included the development of 70 agro-dealer hubs to improve access for 160 million farmers. In some countries this move has led to a substantial decline in the price of fertilizer for producers – a drop of US$2-3 per 50 kg bag in the case of Tanzania.

The way forward
The future lies in public-private partnerships, experts agree. Financing mechanisms can help to build effective agro-dealer networks, making improved seed and fertilizer – often difficult to obtain in remote rural areas – more accessible to farmers when they need them, at the start of the growing season, on a regular, stable basis.

A small but encouraging nucleus of successful initiatives points the way forward, offering models for replication and scaling up. In remote areas where small-scale farmers are scattered, it can be more cost-effective for input suppliers to work through producers’ organizations and other networks to make improved seed and quality fertilizer available and train farmers how to use them. The key is using
partnerships for distribution and knowledge sharing. Strong seed trade and fertilizer associations can play an important role in making policy recommendations.

Getting the best available seeds and fertilizer into the hands of tens of millions of smallholder farmers to raise current crop yields, especially cereal yields from 1MT/ha to 3MT/ha, often requires major political decisions at the highest level of government and initial support to get inputs into the hands of most farmers. This in turn requires farmer databases with information on location, gender, what farmers grow, etc.

Work stream 3: Research and development
Quotes: *Only when knowledge is converted into products and processes and used by society in an economically meaningful way does it become an innovation.*
*Institutional innovation is just as important as technical innovation in transforming African agriculture.*
*There are over 100 universities in Nigeria but not one can sequence DNA.*
*The universities must change to offer training that is in line with the needs of agriculture.*

Setting the scene
While countries in other parts of the world spend increasingly larger shares of their financial resources on agricultural research and development (R&D), Africa is still lagging behind with just 1–2 percent of its GDP allocated to agricultural R&D. This failure to make the necessary investments to develop and nurture the capacity for technology dissemination and adoption has plagued the development of agriculture in Africa and partly explains its low productivity rates. While there have been a number of valiant attempts to tackle Africa’s structural deficits in agricultural R&D, and current implementation strategies are showing promising results, many challenges still exist.

There is a distinction between the well-known agricultural challenges that R&D is set up to address (e.g. low productivity) and the challenges of performing its function effectively (e.g. poorly integrated agricultural innovation systems; limited information and data/foresight capacity; inadequate human capacity; and under-investment in R&D).

Opportunities
Opportunities in Africa start with a vibrant demographic dynamic that offers a growing and increasingly discriminating demand for food. Both smallholders and other intermediary groups are the main suppliers of food to a growing urban population. Africa is more optimistic of the future following an unprecedented decade of
impressive economic growth across the continent, improved governance and improvement in human development indicators. Africa has land, water and human resources enough to be a significant contributor to the world’s food balance sheet. Since 2003, many governments have increased their budgetary allocations to agriculture, and average agricultural growth rates across the continent have exceeded 3.6 percent. African post-harvest losses average 40 percent of the fresh fruit and vegetables produced, worth US$4 billion per year – which, if recovered, are enough to feed at least 48 million people.

The main opportunities are in growing African entrepreneurship and the private sector in agriculture, food systems and agribusiness. This can be leveraged by targeting youth and women. Africa will also need to improve policy and regulatory frameworks for agriculture to make them more supportive of local community participation in rural areas and commercial private sector operations. Although there is an inadequacy of commensurate investment in R&D, the overall trends are improving in terms of public investment, human capacity development and science, technology and innovation (STI) policies.

The R&D work stream is a fundamental one, cross-cutting across all other work streams.

*Pathways to success*

There is a growing appreciation that it is not enough to generate research outputs, it is essential to ensure those outputs are put to profitable use (innovation; see Box).

The guiding framework and institutional architecture for harnessing R&D for agricultural transformation are in place (Science Agenda for Agriculture in Africa; Science, Technology and Innovation Strategy for Africa) and both frameworks were endorsed by the Heads of State and Government of the African Union in Malabo in June 2014. The Science Agenda has the vision that by 2030, Africa will be a significant producer of food for the growing global population.

The strength of agriculture in Africa lies in the multitude of successful agricultural initiatives that the continent has experienced in the immediate past. These include intensifying staple food production (e.g. banana, maize, rice, cassava, sorghum); diversifying value chains (e.g. dairy, horticulture, livestock); and developing growing export sectors (e.g. beef, coffee, cotton, tea).

There is a need to take an inventory of success stories and technological innovations that can be scaled up to regional levels. Some examples are:
• Community-led soil fertility management (e.g. “re-greening of the Sahel” in Burkina Faso and Niger – Great Green Wall of the Sahara initiative)
• Africa–global partnership to unlock production constraints (e.g. eradication of Rinderpest)
• Building regional centres for excellence (e.g. CORAF’s and ASARECA’s commodity centres)
• ICT-based marketing systems (e.g. Commodity Exchange initiatives in Kenya and Ethiopia)
• Weed control technologies developed in Nigeria, which are now working in Mali, Burkina Faso and other countries.

[box]
**Innovation Platforms**
Sub-regional Agricultural Research Organizations such as the West and Central African Council for Agricultural Research and Development (CORAF/WECARD) and the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) are promoting Innovation Platforms involving multi-stakeholder partnerships along key commodity value chains at national levels. CORAF/WECARD’s 2014–18 operational plan hinges on innovation systems and the institutionalization of integrated agricultural research for development (IAR4D) to enhance experience-based innovations among broad-based stakeholders in agricultural R&D. CORAF/WECARD’s experience with more than 200 Innovation Platforms confirms that the platforms encourage key actors to develop a common vision and take concerted action. This common base allows for a wide range in the ways in which innovation platforms are deployed.

The added value of Innovation Platforms is that they bring together producers, service providers, (micro-) finance organizations, traders, policy-makers, researchers and other actors, which allows for all kinds of interesting things to happen and thus for innovation to occur. Implied here is the distinction between ‘invention’ (the solution to a problem, largely the outputs of research) and ‘innovation’ (the economically successful invention).
[/box]

**The way forward**
The four agreed priorities were:
• Strengthen regional institutions first (national institutions to follow later) by reinvesting in and reviving existing organizations and networks.
• Identify best-bet technologies currently ‘on the shelf’ and scale these up by means of multi-stakeholder Innovation Platforms.
**Work stream 4: Regional and international trade**

Quotes: *The farmers feed us and they are the least paid in the value chain. A pineapple can be 0.5c locally and US$8 in France. If we want to ensure the farmers get their money and the Bank will provide loans/credit, and if we want to employ the youth as producers, there should be a drawback system for agricultural transformation. I’m very happy to see AfDB taking a lead in this sector. Recently the priority placed on agriculture has been low, so we really need a champion, especially from the financial sector. We need to address the supply side constraints, and also the roads, the infrastructure. The Bank should support the transformation by dealing with the infrastructure, to improve access to inputs and to markets. There needs to be commitment and responsibility. In the remotest village of Africa, you will find Chinese products. So why can’t we achieve this with products from producers within the region? Never mind all the theorizing... people on the ground are doing it!*

**Setting the scene**

Agriculture is a key sector in African economies, contributing 23 percent of income on the continent, according to the World Bank. Primary agricultural commodities represent a significant share of Africa’s trade, both regionally and internationally. However, Africa continues to import more than it exports. Indeed, the United Nations Conference on Trade and Development (UNCTAD) report shows that in Africa, as a share of GDP, net food imports increased from 3.2 percent on average in the period 1999–2001 to 3.6 percent in 2009–2011. Furthermore, in 2013, just 27.5 percent of Africa’s trade in agricultural commodities was between African countries, while 32.8 percent was with the EU.

The underperformance of the agricultural sector in Africa – illustrated by this agricultural trade deficit, persistent malnutrition and food insecurity in most African countries – can be explained by the interaction of multiple challenges. The main challenges include poor access to domestic, regional and international markets (including infrastructure weaknesses between production and consumption areas); tariff and non-tariff barriers (NTBs) to trade; low productivity; insufficient research and innovation on production and processing techniques; low levels of investment and access to financing; the prevalence of smallholder farming; unclear land tenure
policies; poor agricultural and trade policies such that the business environment is not competitive; quality standards that are difficult to reach; lack of adequate access to information; climate change and unsustainable use of natural resources.

**Opportunities**

Africa’s food imports are mainly processed products ready for consumption, so there is clearly a high demand for such products and Africa therefore has huge scope to strengthen the agricultural sector and food processing industry. The growing demand for food – and pool of youthful human resources – will rise further in Africa with the increasing population, which is expected to reach more than 2 billion by 2050. There are many resources that can be drawn on to meet the challenges and put Africa on track to feeding itself with sufficient nutritious food as well as becoming a net exporter, helping to feed the rest of the world. There is a large amount of unused arable land that can be opened up for production and trade with investments in infrastructure and provision of financing. There are a number of regional economic communities (RECs) within Africa to facilitate trade (e.g. the Common Market for Eastern and Southern Africa [COMESA], the Southern African Development Community [SADC], the East African Community [EAC], and the Tripartite Free Trade Area [TFTA] which will combine these three blocs, as well as the Economic Community of West African States [ECOWAS] and others). There also exists a number of key financial institutions offering relevant programmes, including the AfDB and its African Development Fund (ADF), Trade Finance Program (TFP), Africa Trade Fund (AfTra), and the Fund for African Private Sector Assistance (FAPA), as well as the Africa Export-Import Bank (Afreximbank), among others.

**Success stories**

Commodity corridors can be very effective in facilitating regional trade and fostering regional integration. The LAKAJI Corridor starts at the port of Lagos in the south of Nigeria and runs northeast all the way through the country (including states bordering Benin) and across the border in the north, ending in Maradi, Niger. The corridor makes use of Nigeria’s north–south interstate road (with variable road conditions), as well as the rehabilitated railroad between Nigeria’s two largest cities, Lagos and Kano. Commodities flowing north are mainly imported consumer staples, including rice, sugar, palm oil, fish and packaged foods, as well as fuel, fertilizer, cement and construction materials. Those flowing south include live cattle and many unprocessed or semi-processed commodities, such as maize, sorghum, millet, groundnuts, cashews, shea butter, cocoa, cotton and sesame. The LAKAJI Corridor provides access to large tracts of arable land, grain storage facilities, processing centres, water retention and irrigation schemes, and a number of special economic zones designed to promote agribusiness. Limiting factors include the poor conditions of secondary roads in some states along the route, and lack of affordable energy. Building the
agribusiness industry along the LAKAJI Corridor will require coordination to maximize the impact of investments by the private and public sectors and donor agencies.

The way forward

Panel members and expert participants considered how Africa can reverse the underperformance of its regional and international agricultural trade. Many key strategies and areas for investment were highlighted, as listed below.

Policies and strategies:

- Strong visionary leadership is needed to establish and implement the right policies, strategies and institutions in order to create an enabling environment for agricultural and agro-industrial development and trade.
- Partnership, cooperation and improved trust are urgently needed to address non-tariff barriers, such as the widespread harassment of truckers and producers seeking to take goods across borders.
- To increase international exports, African producers need to improve the quality of produce and products, but the standards imposed should not be unfairly high or too Eurocentric.
- To reduce imports, policies must incentivize and support domestic and regional trade.
- Policies of inclusion are needed to boost the participation of a range of value chain actors (e.g. women, young people, farmers, distributors, private sector, public sector, national, regional and continental institutions, etc.).
- Policies must take into consideration climate change and the sustainable use of natural resources and ecosystems.
- Objectives and targets need to be set for intra-regional and intra-African trade in agricultural products.

Funding and financing:
• Agricultural trade must be included in national budgets.
• Governments need to implement tax reforms and other incentives to facilitate the engagement of the private sector in agricultural trade.
• There needs to be a drawback system for agricultural transformation to offset the high costs of inputs, production and processing and to ensure that the farmers who feed us are well paid.
• The costs of inputs need to be reduced so that the prices of goods can be more competitive (e.g. currently African countries import chickens and eggs from Brazil, because Brazil can produce and sell them more cheaply due to their investment in the soyabean industry for feed).
• Innovative financing tools are needed.
• Reliable data and statistics need to be made available.

Research, development and capacity building:
• African countries and regions should focus on the producer value chains where we have comparative/competitive advantage.
• We need to pursue approaches for adding value, instead of exporting mostly non-consumable commodities while importing processed, consumable products; targets should be set for this.
• Programmes are needed to build technical and entrepreneurial capacity among actors in the value chains, with a particular emphasis on women, to facilitate their integration into formal channels of production and distribution.

Infrastructure and transport:
• Large areas of unused arable land need to be opened up to transportation routes.
• Transport costs and logistics between and within countries and regions need to be rationalized and streamlined; the current massive variation causes fragmentation and is detrimental to intra-African trade.
• Investment is needed to develop essential infrastructure to facilitate trade between and within countries, including roads, energy supply and ICT.

Work stream 5: Innovative financing

Quotes: “Farmers and enterprises are literally starved of the cash that they need.” – Yana Kakar – Dalberg Global Development Advisers
“the aim is wealth creation not poverty alleviation” – Yana Kakar – Dalberg Global Development Advisers
“There is no one right answer or financial instrument for every case.” – Yana Kakar – Dalberg Global Development Advisers
“Agriculture must be viewed as an economic activity, not a charity or humanitarian initiative.” – Adam Malima, Deputy Minister of Finance, Tanzania

“If we can unleash local currency lending it could be a major game changer” – Jenny Scharrer, KfW

Setting the scene
Agriculture provides livelihoods to 60 percent of Africa’s population and contributes 20–30 percent to Africa’s GDP. Yet it attracts less than 5 percent of lending from financial institutions on the continent, leaving farmers and agricultural enterprises starved of the capital they need to operate and grow their businesses. Finance is a cross-cutting catalyst for growth in the sector. By making investments possible in productivity-enhancing farm inputs or agro-processing equipment, finance will be the key to increased productivity, higher-value products and a broadened diversity of agricultural production.

Opportunities
The causes of the gap between need and investment are on both the demand and supply sides. On the demand side, the types and scope of financing requirements for agricultural transformation vary by sector and by duration, from short-term trade finance to long-term debt and equity investment. On the supply side, financial institutions lack innovative products suited to the specific requirements of the very varied agriculture sector (different cropping systems, scales of operation and stages of the value chain), and will need a change of mindset to overcome perceptions of agriculture as a high-risk, low-return sector (see also Work Stream 17, Agricultural Insurance).

Private sector-led innovative financing tools hold great promise for improving access to capital in African agriculture by catalyzing private investment and addressing market failures. Financing may be regarded as ‘innovative’ when it:

- Introduces novel approaches or products to address established problems
- Extends proven products to new markets or customers and/or
- Includes new types of investors or sources of capital.

[box] Ministerial Dialogue on Innovative Financing
This session brought together ministers of finance from several African countries, along with governors of central banks and private sector financiers. This group will play a crucial role in transforming African agriculture. Participants presented their perspectives on innovative financing schemes and identified promising investment opportunities at national and regional levels, as well as potential inputs from the AfDB.

Priorities:
• Establish a ‘de-risk’ investment facility across the value chain.
• Reduce climate-related risks through the development of weather risk insurance schemes.
• Encourage favourable lending terms for infrastructure development.
• Establish a specific facility for women to improve their access to finance.
• Launch diaspora bonds to support agribusiness, infrastructure and long-term finance.
• Build capacity of banks to understand the agriculture sector.
• Introduce farmer registration and biometrics and reduce insecurity of land tenure as a means to improve financial inclusion of farmers by banks.
• Take advantage of private equity funds (e.g. those provided by the German government development bank, KfW).
• Establish agro-growth corridors and staple crop processing zones to attract private sector investors to rural areas.
• Establish commodity exchanges across the continent.

Success stories
Many existing financial products have the potential for scaling up. Microfinance and green bonds, now seen as mainstream approaches, were originally introduced as innovative products. KfW’s Africa Agriculture and Trade Investment Fund (AATIF) and the Fund for Agricultural Finance in Nigeria (FAFIN) are innovative public–private investment funds that crowd in private capital to the agriculture sector. Other examples are AGRA’s credit guarantee and risk-sharing facilities with Equity Bank and Standard Bank; weather index-based insurance that helps farmers mitigate climatic risk; guarantee-like products, such as warehouse receipt programmes that eliminate the need for external collateral; and private partnerships like equitable outgrower schemes that link agribusinesses and farmers. A partnership between the AfDB and KfW was suggested to 1) help bring successful agriculture financing solutions to scale; and 2) fund feasibility studies related to the two facilities announced during the Ministerial Dialogue (risk-sharing facility, affirmative financing action for women).

Identity management and corroboration of membership data (for example of cooperatives) are major issues for financial institutions. Nigeria has rapidly built a national registry of farmers, moving from manual registration to optical recognition forms and other new technologies. This system has formed the foundation for the mobile wallet technology (see Box 2). On average it would cost US$200 000 to set up a new bank branch – but once registration has been dealt with, farmers can apply for loans, insurance and other financial products via mobile technologies, with no need for physical branches. This technology keeps the movement of large amounts of money transparent and offers a framework for farmers to receive quick financing. (For example, where previously it could take 8–9 months for a loan issue, the aim is to
reduce this to 4 months – and eventually less.) A partnership between the AfDB, Cellulant and other ICT platform providers was suggested to 1) identify/register farmers through biometric means (Know Your Customer, KYC); and 2) provide e-wallet services (government-to-person, G2P payments) (see box for more on mobile wallets).

**Land tenure** is also important for security of financial investments. Rwanda has now registered all plots and provided owners (both husbands and wives) with titles. Land is now tradable and can be used as collateral to access loans. The average plot size is 0.25 ha – small plots are grouped together but retain individual ownership. In these cases, farmers work together to produce one crop and share revenues, which allows them to access more government input subsidies. Advisory services are also provided to help farmers access loans.

On the public side of the equation, AGRA’s Nigeria Incentive-Based Risk-Sharing System for Agricultural Lending (NIRSAL) unlocks existing funds from the Central Bank of Nigeria. The initiative has five main components: a risk sharing facility, an insurance component, a technical assistance facility, bank incentive mechanisms and an agricultural bank rating system. NIRSAL’s goal is to increase agricultural loans from 1.4 to 7 percent of Nigeria’s total bank lending, amounting to some US$3 billion within ten years.

**[box]**

**Mobile wallets for farmers in Nigeria**

Nigeria has pioneered a system to distribute fertilizer subsidies directly to farmers in partnership with the ICT company Cellulant (www.cellulantwallet.com). Although both demand and supply were abundant, an innovative platform was needed to effectively link the supply with demand from farmers – and in the process, a foundation for providing a range of financial services for farmers was created.

Farmers receive electronic vouchers via their mobile phones to redeem at appointed agro-dealerships. Farmers are not required to have a mobile phone to register for e-subsidies, but then they must rely on the community to know when subsidies are available.

The programme successfully combines private sector expertise and innovation with the government’s broad networks and legislative authorities. As many as 14.3 million farmers in Nigeria are estimated to have benefited from the mobile wallet programme and the cost per farmer receiving fertilizer subsidies decreased from US$225–300 in 2011 to US$22 in 2013.

**The way forward**
Work stream participants suggested the following:

- Seek financial support from ministries of finance, central banks, AfDB and donors to co-fund a risk sharing facility, agricultural insurance and technical assistance required by banks for implementation.
- Launch diaspora bonds to support agribusiness, infrastructure and long-term finance.
- Build the capacity of banks to understand and support the agriculture sector.
- Introduce farmer registration and biometrics and reduce insecurity of land tenure as a means to improve financial inclusion of farmers by banks.
- Take advantage of private equity funds (e.g. those provided by the German government development bank, KfW).
- Establish an agribusiness readiness index to operate similarly to the World Bank’s ‘Doing Business’ indicator.
- Scale up local currency lending, for example through the development of innovative (hedging) instruments.
- Governments should consider agricultural subsidies to enable Africa to compete on a level playing field with the rest of the world.
- Provide support for financial literacy initiatives.

Work stream 6: Agricultural logistics management

Quote: The first and last mile are the main stumbling blocks in transport, especially for high value agricultural products.

Setting the scene

Africa has a great deal of land that is suited to growing crops and enough labour to greatly increase production and improve livelihoods and food security. A growing demand for high-value agricultural products (fruits, vegetables, animal products) in both local and international markets is being driven by urbanization and rising incomes. As a result, more and more smallholder farmers are diversifying from slow-growing staples, such as maize or cereals and cash crops like coffee, to higher value agricultural produce. This promises significant opportunities for farmers, rural food processing industries and transport companies. The emerging smallholder sector also offers new opportunities for women and young people to participate in agricultural value chains as farmers, marketers, processors and input suppliers. However, a lack of infrastructure and common policies around agricultural logistics management mean that these opportunities cannot be fully explored to meet the needs of the poor. Challenges particularly concern the transport and storage issues faced by smallholders as they seek to become important players in emerging agricultural supply chains in Africa. Rural infrastructure, particularly roads and transport services, continues to constrain farm incomes and the adoption of technologies.
Opportunities

Across Africa, new markets are emerging for fresh produce, both within countries and across regional and international borders. These markets are being fuelled by rapid urbanization and the growth of the middle class. This presents enormous opportunities for the client, although infrastructural constraints remain.

Much of the food that African consumers want can be grown locally but imports are increasing because local production cannot keep pace with rising demand. Yet Africa has extensive land and water resources that can be brought into production and opportunities to increase yields and labour productivity. This means that products have to actually get to the markets. But transport and storage are extremely limiting factors. Fruits and vegetable products are highly perishable and value loss happens fast. No agricultural transformation strategy can ignore small farmers but the fact is they often do not have ready access to markets. Most smallholder farms are far from roads and transporting products to collection points can take a long time and be very costly. It also accounts for a lot of post-harvest loss. The infrastructure at the collection point, as well as at the port, is also critical. The emergence of ICTs on the continent can help support the timely delivery of produce.

Pathway to success

The International Forum for Rural Transport and Development has the experience and partnerships needed to develop and refine a toolkit for improving the logistical performance of the smallholder agricultural sector. The toolkit would comprise methodologies for collecting and analyzing key information (e.g. what crops are being produced in an area, location of consolidation points, value of post-harvest losses per year, market destinations, reliability of transport, etc.) as a step towards improving rural transport infrastructure and collection services.

The way forward

- Develop the cooperative movement to encourage bulking and aggregation of large quantities of produce
- Decentralize agro-processing of produce within a region to reduce long travel for produce
- AfDB to urgently collaborate with national rural roads sector in countries to achieve roads connectivity
- Refrigerated storage facilities are needed to ensure that agricultural products do not spoil while they wait for transport to market (or export).
- A focus on logistical issues means major gains to farmers’ incomes but one size does not fit all. The size of the farm, type of crop or animal, geography, security, location can all have an impact on logistics and these factors should
be carefully analyzed and strategies developed accordingly by countries and aligned with regional trade interests.

- A multi-sector approach is needed that links all actors along the value chain (producers, users, packagers, transport, markets, etc).
- Capacity building is needed along the value chain to enable value chain actors to become more professional.

Develop and share a compendium of best practices in agricultural logistics.

**Work stream 7: Youth in agribusiness**

**Quote**

*It is very important to change the perception of agriculture. Agriculture does not equal poverty.* President of the AfDB, Dr Akinwumi Adesina.

**Setting the scene**

Africa has the youngest population in the world, but the average age of its producers is alarmingly high for a continent hoping to feed itself by 2025 and to eradicate malnutrition within ten years. There are currently 364 million Africans between the ages of 15 and 35 and that number is expected to double by 2045. Lack of access to land, finance, markets, as well as to technologies and practical skills are all barriers to young people entering the agricultural sector. So too is the vision of farming as an unattractive career path, with hard labour, long hours and poor remuneration, coupled with scant social recognition. However, experience has shown that there is good scope for drawing the next generation into the agriculture sector as ‘agripreneurs,’ harnessing new skills and technologies, such as ICTs and a value chain approach. The result can be more jobs for young people, increased food production for a growing population and less reliance on food imports, meaning a healthier trade balance for African countries.

**Opportunities**

An important shift is taking place in perspectives of youth and their role in agricultural transformation in Africa. Rather than being seen as a separate group, along with women and other disadvantaged groups, there is a new trend towards viewing young people as the lynchpin of forward-looking agribusiness and job creation, especially educated young people returning to rural areas.

Youth can become the engine driving a new agriculture for Africa, based on agribusiness enterprises in which they have a feeling of ownership and commitment. Trained in the right skills, agribusiness can be profitable for young African people – both men and women. Developing agricultural commodity value chains is a critical component of the approach, as is access to credit and technologies. As well as having an impact on individual livelihoods, this pathway can have a profound effect on
society, helping to tackle serious issues such as the rural exodus and soaring youth unemployment, with all the risks that these entail. At present, 60 percent of Africa’s unemployed are young adults. Moving forward towards a strategy based on developing detailed agribusiness plans and inclusive value chains suited to youth involvement will depend on national commitment and support from regional development partners.

Aside from farming itself, there are opportunities for modern agriculture that are particularly suited to the skills and mindset of young people. These include value addition, new market dynamics, modern production techniques and a whole range of related services and logistics.

Figures show that stimulating income-generating rural enterprises based upon the energies and skills of youth can pay dividends in economic terms. But the potential impact goes far beyond financial returns. One recent study shows that a fully funded agripreneur agribusiness incubation costing about US$713,000 could generate between 103,000 and 175,000 jobs and $1.7 and $3.0 million in net income revenues, with powerful repercussions for society as a whole, as well as for the youth who are direct beneficiaries.

**Success stories**

- There are proven models for mainstreaming African youth into agribusiness ventures, often with remarkable impacts. A number of African Development Bank projects, especially the ENABLE Youth platform and the UNIBRAIN initiative that reinforce the role of youth in rural transformation, have shown good results in Cameroon, Ghana, Ivory Coast, Senegal, Sierra Leone, The Gambia, Nigeria and Tunisia, among others.

- A new generation of young agripreneurs is emerging who are developing ICT services and applications that support agricultural activities through access to finance, advisory services and market information services. Examples include Ensibuuko (Uganda), FarmDrive (Kenya) and mFarm (Kenya).

  - The Technical Centre for Agriculture and Rural Cooperation (CTA) has designed various ICT and youth in agriculture initiatives in ACP countries, often using social media to spread the message in a way that is attractive to young people.

  - AGRA has launched skills training programmes for value chain and agribusiness enterprises aimed at young people, as well as other skills, such as business management.
The Forum for Agricultural Research in Africa’s (FARA) UniBRAIN initiative is bringing together researchers, the private sector and universities and other tertiary institutions to commercialize technologies and innovations while incubating youth for employment and entrepreneurship.

The government of Senegal has made three farms available throughout the country to be developed by young people interested in developing a commercial approach to agriculture.

**BOX**

**A network for young agripreneurs**
The International Institute of Tropical Agriculture (IITA) and partners have developed a powerful approach for directing young people to careers in agribusiness by setting up Youth Agripreneur Groups - self-help groups that conduct agribusiness incubations leading to profitable rural enterprises. As a direct result, these efforts have established numerous profitable enterprises, including intensive vegetable production, marketing new varieties of cereal and legume seed, fish farming and associated activities, and value-added processing of soybean and cassava. Groups use social media, organize workshops on issues related to youth agripreneurship and host study visits from other youths. The initiative, launched in Nigeria in 2012 under the IITA Youth Agripreneur Program, has since been rolled out in DR Congo, Kenya, Tanzania and Uganda. Women feature prominently in all the start-ups.

**The way forward**
Steering young people towards a career in modern agriculture can start with specially designed school curricula, skills training and mentoring from agribusiness champions.

The Youth in Agribusiness Program, which seeks to promote entrepreneurship among young Africans, including women, is showing the way forward. To be implemented by national agencies, it will involve support from specialized technical centres of excellence, such as IITA, AGRA, FARA, CTA, Techno-serve and others. The plan is to offer new opportunities to at least 800,000 young African men and women in 20 Regional Member Countries (RMCs), by providing information, life-skills education, financial services, proven technologies and a menu of agribusiness information and openings. The programme also offers individual internships through placement with successful agribusiness mentors and champions, as well as other suitable private businesses. The package includes ICT tools to promote youth in agribusiness, agribusiness skill-building and mentoring from the private sector.

Several innovative financing models could be replicated or scaled up. One example is the Sierra Leone model – supported by IFAD – of village and community banks owned
through shareholding, which is affordable for the poor. Another is the Agritech initiative, which currently reaches 200,000 farmers in Rwanda, with plans to reach two million farmers by 2016 and roll out to a further 20 countries.

A special programme on youth and agribusiness has been funded by AfDB to create gainful employment and income generation for African youth through agriculture and agribusiness. Expected benefits include the creation of 154,000 decent jobs and 18,400 businesses.

There is a need to include affirmative action for youth in all AfDB agricultural activities and beyond, as is the case for women. Creating a platform to share experiences and develop mentoring would also help to drive youth entrepreneurship.

**BOX**

*Ministerial Dialogue on Youth in Agribusiness*

An unemployed and angry youth is dangerous and a source of political risk, as witnessed in the Arab Spring. In order to attract young people into the agribusiness sector, there is a need to:

- Build the skills and capacity of youth, including how to manage a business, use ICTs for market information access, crowdfunding, commodity exchanges, etc.
- Facilitate access to finance for young people who have been trained in agribusiness. A Youth Employment in Agriculture Financing Facility (YEAFF) should be set up at the AFDB for this purpose.
- Increase investment to develop rural areas and make them conducive to improved livelihoods. The concept of the Agro-Industrial Town (AIT) in Agribusiness Investment Regions (ABIR) should be pursued, alongside the Agricultural Enterprise Processing Zone (AEPZ) initiative launched by the AfDB.
- Determine the most appropriate business models to support youth engagement in agricultural mechanization as service providers and on their own farms.
- Create a funding facility at the African Development Bank to scale up the Songhai and IITA models, as well as other experiences in a number of countries, starting from 2016. IITA should engage with AfDB in the development of a plan on how to scale-up the model.
- Modify agricultural training curricula in Africa by bringing business management courses into agricultural curricula and agriculture into business management curricula.
- Engage the media in helping to change youth perceptions of a career in agriculture.

**Work stream 8: Nutrition: Investing in Africa’s grey matter**
Quotes
Prof. Sandy Thomas (Big Win Philanthropy): To improve nutrition for children, adolescents, old people, we need to think about the entire food system, processing, transport, marketing, consuming. Only then it will be feasible to have an impact. ... Getting the governance right has the potential to improve nutrition for all!
Mr Lopes da Silva (World Food Programme): Beyond nutrition-specific interventions, there is still another universe of strategies that are required in order to retain gains on stunting over time ... we also have to look at issues like early marriages, many children per household, and child-rearing practices. And we need school feeding programmes to provide nutrients to adolescent girls.
Mr Ajieroh (GAIN): We need to democratize access to nutritious foods, remove the barriers between the people at the bottom of the pyramid and food, make nutritious foods accessible at the marketplace.
Nita Dalmiya (UNICEF): It’s hard when looking at government budgets to know which items are for nutrition-specific and nutrition-friendly interventions. We need to know the dollar amounts or percentages allocated to that, so that the government can be held to account on this.
Richemond Seki (FAO): We need to build our work on the basis of the ‘right to food.’

Setting the scene
Africa’s current population of a billion people is expected to reach more than two billion by 2050. This demographic ‘youth bulge’ offers an opportunity for dynamic growth, since human capital is the foundation of economic development. But in Africa today, one person in four still goes hungry, and poor nutrition causes approximately 45 percent of deaths in children. While providing food security and eliminating hunger are crucial goals, providing nutritious food is also critical. The multiple burdens of malnutrition pose a direct threat to the aspirations of the next generation and Africa’s future. In sub-Saharan Africa, according to Save the Children (2013), 38 percent of children are stunted, and studies have shown that stunted children tend to have poorer achievement in school. As reported in the Lancet (McGregor, 2007), children who are malnourished also go on to earn 20 percent less as adults than those who are well nourished. Ultimately, government estimates (2013) suggest that in low- and middle-income countries, the impact of malnutrition decreases GDP by as much as 16 percent.

Opportunities
Nutritional interventions have high cost-benefit ratios; some as high as 1:138, according to the World Bank (2006). The Copenhagen Consensus of Nobel Laureates agreed on the eight most cost-effective interventions available in development, and four of these were nutrition interventions. The first 1000 days of life – from conception
to the second birthday – have been identified as a critical window of opportunity for providing good nutrition to mother and infant, in order to give the child the best chance at achieving both a healthy physical stature and good cognitive development. Well-nourished, non-stunted girls also have a much better chance of giving birth to healthy babies. Improved nutrition will support a population of increasingly capable, productive and affluent workers and consumers, and thus help to break the intergenerational cycle of poverty and inequality. There are many initiatives for improved nutrition that African countries can engage with.

One of the key continent-level initiatives concerned with nutrition is the Comprehensive Africa Agriculture Development Programme (CAADP), of which ‘Pillar III’ focuses on reducing hunger and improving food and nutrition security. Another is the Malabo Declaration on Accelerated Agriculture Growth and Transformation for Shared Prosperity and Improved Livelihoods, which includes a commitment to ending hunger in Africa by 2025, with specific targets to improve nutritional status and to eliminate child under-nutrition in Africa with a view to reducing stunting and underweight prevalence to 10 percent and 5 percent, respectively, by 2025. There are also many relevant global initiatives. One of the Sustainable Development Goals (SDG2) is to end hunger, achieve food security and improved nutrition, and promote sustainable agriculture, by 2030. The Scaling Up Nutrition (SUN) Movement is another important initiative that African countries should engage with.

**Success stories**

There are lessons and best practices from the Democratic Republic of the Congo, Ethiopia, Niger, Rwanda and the United Republic of Tanzania, among others, that offer solutions. Technical ability and political will are now needed to replicate these and take them to scale.

**Box:** Ghana achieved the fastest decline in child stunting in sub-Saharan Africa, reducing it from 35 percent in 2003 to 28 percent in 2008. The approach included investment in agriculture as a driver of economic growth and poverty reduction, together with feeding initiatives for infants and young children, all in a context of a stable political environment, according to a 2010 report by the government and the United Nations Development Programme. As emphasized by discussants at this conference, the success in Ghana was linked to a vision, not only the vision of the leader, but a vision shared by all staff and stakeholders, at all levels. For the AfDB to succeed in building Africa’s ‘grey matter infrastructure,’ President Adesina also needs to embrace and foster a shared vision at AfDB and with partners and stakeholders.

**The way forward**
The potential benefits of addressing malnutrition are enormous, so this is a huge opportunity that requires a greater response than it is currently receiving from the AfDB. One of the four main stated goals of AfDB’s President Adesina is to eradicate malnutrition in Africa within 10 years, by 2025. To do this, the AfDB must put nutrition at the heart of sustainable economic development. The following approach is proposed:

- The AfDB should invest much more in child and maternal nutrition – both by making new investments and by reviving existing programmes with a view to boosting their focus on nutritional value. Through these investments, the AfDB should support existing African and global initiatives to improve nutrition.
- To guide the investment strategy on nutrition, the AfDB and its partners should develop a package of recommended interventions by a fixed deadline, including direct nutrition-specific interventions and indirect efforts involving other sectors. A way to coordinate these various efforts must also be determined.
- Some specific interventions to be considered include the following:

  - Increasing production of nutrient-rich foods such as pulses, vegetables, milk and eggs.
  - Raising the nutrient levels of crops through biofortification or post-harvest fortification.
  - Improving the storage and preservation of food.
  - Promoting more non-cereals in terms of ‘smart’ inputs and market support.
  - Adapting private sector supply chains to make nutritious food accessible and affordable.
  - Giving access to education along the chain from nutrition to agriculture both at community and individual level, such as through extension workers.
  - Capacity building and nutrition education to develop expertise in nutrition in Africa.
  - School feeding programmes for children and adolescents, especially girls.
  - Cash transfer systems, to boost consumer purchasing power.
  - Making nutrition-related lending/investment data available and clear so that there can be accountability and improved transparency.
  - Combining sites for research and development in nutrition-sensitive agriculture and food processing, in order to get the products right.
  - Ensuring that local companies are making food for malnourished children so that such food does not need to be imported.
  - Involving women, including by funding micro-projects for the production of value-added nutritional products.
Work stream 9: Marketing and agribusiness

Quote: A value chain is only as good as its weakest link, so this is where we need to focus.

Setting the scene
Africa is on the move, with unprecedented changes taking place in its food markets. Rural people are moving to towns and cities in increasing numbers, and the proportion of the population in the middle class has more than doubled in the past ten years. The opportunities for agribusiness have never been better. But many farmers still lack access to the inputs and finance they need to improve and diversify their production. They are also hampered by the threat of a failed harvest in the event of extreme weather, an increasing possibility in the face of climate change. At the same time, the enabling environment for market development remains poor, with the high cost of doing business limiting profitability and deterring private sector investment.

Opportunities
The global agribusiness market is estimated at over US$5 trillion, providing more than 40 percent of all employment. Investment in this market is growing fast, with more than US$100 billion invested in 2013 (according to McKinsey analysis). There is therefore considerable potential for market growth and for attracting young entrepreneurs into the agribusiness sector.

Urbanization and the growth of the middle class are creating new markets for processed and value-added products. Urban and middle class consumers have a more varied diet, increasing the demand for livestock products and creating opportunities for farm diversification. There are significant potential income gains for farmers, since producing and selling meat, dairy products, fruit and vegetables to towns and cities can earn a farmer five to ten times more per hectare than growing cereals.

However, for this opportunity to be realized, substantial public and private investment is needed in transportation, logistics, packaging, storage and processing, as well as in wholesale markets in urban areas. It will also be important to ensure that a broader range of farmers can access inputs, rural services and extension information to take advantage of this opportunity, especially women.

Success stories
This section is a bit long, suggest you just keep the box plus two out of the four examples. Maybe move one or two to ‘innovative financing’?
The Ethiopia Commodity Exchange (ECX) is a marketplace where buyers and sellers come together to trade, assured of quality, delivery and payment. ECX has successfully linked 2.6 million small holder farmers to local, regional, and international markets with average daily sales of between US$3.5-14 million. ECX works with 11 partner banks and has 19 delivery warehouses with 300 000 MT of storage capacity. Some 5.7 million bags per year are graded, handled, stored, and delivered every year. Market information prices are transmitted to 90 rural ticker boards every four seconds. The exchange also uses its website, SMS messages and voice call-ins to provide price updates. ECX provides additional useful information, for example, agricultural best practices, weather, disease and pests, etc. from government extension workers, bigger farmers or non-profit extension staff.

The New Alliance for Food Security and Nutrition is a partnership in which stakeholders commit to specific policy reforms and investments (outlined in Country Cooperation Frameworks) that aim to accelerate the implementation of national food security strategies. These commitments address key constraints to agriculture-led growth, including those that prevent smallholder farmers, particularly women, from increasing productivity and accessing markets. Partners agree to hold themselves accountable, reporting annually on progress, and this strong commitment at the country level is the key to success.

The African Fertilizer and Agribusiness Partnership (AFAP) works with the public and private sectors to invest in fertilizer markets, with the goal of increasing the number of farmers using fertilizers by 15 percent and at least doubling their usage. Using an innovative partnership contract, the AFAP joins industry and development interests to inspire productivity, food security and prosperity.

The Africa Enterprise Challenge Fund (AECF) is a matching grant fund, a feeder fund, a social venture capital fund and a nascent impact investment fund. The AECF provides grants, debt, equity and financial guarantees. Additionally, the AECF offers investment brokerage, business development services, market facilitation and knowledge management and learning.

The Agriculture Fast Track Fund is a US$28 million multi-donor trust fund administered by the African Development Bank. It offers grants to agri-businesses and investors so they can undertake the preparation studies and analysis needed to inform investment proposals and attract financing. The Fund has approved US$6.5 million in grants to 12 companies. These grants are expected to leverage up to US$250 million in private investment that will benefit approximately 92 000 smallholders.

[box]
Grow Africa
Grow Africa was founded in 2011 by the African Union, the New Partnership for Africa’s Development and the World Economic Forum. Grow Africa’s role is to increase private sector investment in agriculture and accelerate the implementation of investment commitments in line with the goals and frameworks of the CAADP. Grow Africa is a trusted platform for increasing responsible, sustainable and inclusive private sector investment in agriculture across 12 countries. It works in collaboration with over 200 African-based and international companies and many other stakeholders, including farmers’ organizations, donors, international agencies and civil society organizations. To date, from over US$10 billion in private sector investment commitments, US$1 billion worth of projects have been implemented, benefiting over 2.6 million farmers.

The way forward
There is a powerful case for changing focus, moving away from an agriculture-led growth strategy and towards an agribusiness development strategy, in which policymakers, donors and entrepreneurs target the entire value chain in an integrated manner. In the future, demand will continue its shift from unprocessed bulk products to value added products, underlining the need for close coordination between policymakers from different government ministries. Just as importantly, demand will continue to shift from developed to emerging economies, thereby necessitating that business strategies are framed with that in mind.

Farmers need to be organized into producer groups or cooperatives to help them access inputs, including knowledge, especially regarding marketing and business planning. In addition to training for farmers, capacity development initiatives should include vocational training to encourage young people to engage in agriculture and view it as a business.

Better rural infrastructure (roads, storage, electricity, irrigation) is an essential requirement for encouraging private investment in agribusiness and promoting farmers’ access to markets.

Successful solutions should be shared and replicated, for example, agricultural processing zones, which take a holistic approach to addressing infrastructure, land tenure, finance and marketing challenges.

The African Development Bank should work with commercial banks in a risk sharing arrangement to reduce actual or perceived risk to farmers. The AfDB needs to take a
new approach to financing with farmers and the private sector. It can also assist by sharing lessons from the countries that have made the most progress.

[box]

**Ministerial Dialogue on Marketing and Agribusiness**

In this session, ministers of agriculture, finance, planning and other sectors met to share their experiences and to propose policy reforms to accelerate progress in agribusiness development. Dr Jacques Diouf, former Director General of the Food and Agriculture Organization of the United Nations (FAO) led the dialogue, stressing the importance of a value chain approach. He said the current situation, in which Africa produces raw materials that are shipped back as processed products, is no longer acceptable.

The ministers stressed the need to take a holistic, multi-sector approach to promoting agribusiness, involving all ministries, public and private sector, and civil society, and with a strong emphasis on the mobilization of finance and agricultural research and development. This will include building the capacity of farmers’ groups and community-based organizations for contract farming and sharing knowledge on different models for its application. A regional rather than country-by-country approach to driving growth in the major staple crops will be required.

They also acknowledged that better infrastructure in rural areas is vital to attracting the necessary private sector investment and to reducing current high levels of post-harvest loss. Farmers will need to produce better quality outputs with more stable yields to attract investment in processing. Establishing quality assurance and standards schemes is vital to promoting international trade. Finally, processing must be cost-effective in order to retain competitiveness in export markets.

**Work stream 10: Climate-smart agriculture**

*Quote: Knowledge of sustainable agricultural development, and sustainable intensification founded on agro-ecological approaches, is central to CSA.* (Bruce Campbell, Programme Director of CCAFS).

*Setting the scene*

With the impact of climate change already making itself strongly felt on African food production, and predictions of more and worse to come, there is an urgent need to develop adaptive mechanisms to counter increased drought, erratic rainfall, shorter growing seasons and other weather-related events. Examples from various African countries show that there are a number of opportunities for transforming agriculture by developing climate resilient livelihood systems to foster food and nutrition security, together with sustainable resource management.
Climate-smart agriculture (CSA), a concept created by the Food and Agriculture Organization of the United Nations (FAO), is an approach that looks both to the present and to the future. It offers prospects for increasing food production to feed the continent, in spite of challenges caused by climate change, while at the same time building resilience to future climatic swings and developing opportunities to reduce greenhouse gas emissions from agricultural practices. As such, it pursues the dual goals of climate adaptation and mitigation.

Successful CSA initiatives have shown considerable promise, but scaling them up will require strong partnerships, innovative financing mechanisms and suitable policy reforms.

**Opportunities**
Given the sensitivity of prevailing African farming systems to drought, which is predicted to become more frequent and acute in coming years, crop yields are projected to decline by up to 50 per cent across the continent. CSA offers an opportunity to help counter this trend, as well as other climate vagaries such as unpredictable rainfall and sowing patterns, or, in some cases, excessive bursts of torrential rainfall. Climate smart agricultural practices or production systems are closely linked to local climatic, biophysical, socio-economic and development conditions, rather than being stand-alone models in their own right. They range from strategies adopted at the national level to technologies practised at farm levels, but in all cases the aim – and often the effect – is to increase productivity, build resilience and contribute to mitigation.

Although studies show CSA to be a cost-effective strategy, financing will be key to this approach. Agriculture is currently sidelined from most climate financing mechanisms and the opportunities for CSA to combine adaptation and mitigation benefits while enhancing food security are largely overlooked. However, the advantages of this still relatively new approach are real, and there is a strong case for embedding CSA into all agricultural investment in Africa, rather than viewing it as an occasional add-on. There is good potential for using CSA to tackle post-harvest losses, a major problem for Africa agriculture.

Strengthening the CSA approach will depend on the involvement of a broad range of stakeholders, including the public and private sectors, academia and research, non-governmental organizations and civil society organizations, and the existence of a practical platform for their engagement and delivery of solutions.

**Success stories**
• There are signs that CSA for Africa is being taken increasingly seriously as a valid approach. In June 2014, African leaders endorsed the inclusion of CSA in the NEPAD programme on agriculture and climate change. FAO, in consultation with NEPAD and the World Bank, developed a screening framework in the context of CAADP to identify priority areas for CSA financing.
• Some African farmers are benefiting from early warning systems to advise them of impending weather events.
• Water conservation technologies, based upon farmer-led innovation, have led to the re-greening of the Sahel and intensification of agricultural production.
• Agroforestry has been shown to be an effective way of reducing greenhouse gases, improving fallow systems and soil fertility.
• Several African countries have already screened their National Agriculture Investment Plans and identified specific investment needs for CSA implementation and upscaling.
• The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) is leading capacity building for African farmers and upscaling CSA technologies, using several decision support tools developed by the CCAFS research team.
• IWMI scientists have developed an analytical tool to evaluate the need for water storage and its likely effectiveness under existing and possible future climate conditions. This has been applied in the Volta Basin and the Ethiopian part of the Blue Nile Basin.
• Specific opportunities for CSA have been identified to: recover forest-based farming in Central Africa, develop horticulture-led growth in Northern Africa, promote crop-livestock integration in Southern Africa and use rice and aquaculture systems to supplement cereal and tuber staple crops in West Africa.

BOX
Climate-smart agriculture in East Africa
Water-smart agriculture is being used by a wide range of farmer support organizations in East Africa to support smallholders through four interrelated elements: a) making better use of green water (rainfall and soil moisture) to avoid reliance on abstraction of blue water (which already accounts for more than 70 percent of total global abstractions); b) where sensible and feasible, developing supplementary irrigation based on principles of good resource governance and water use efficiency; c) stronger linking of farmers to market opportunities and value chains that can provide opportunities for substantial income enhancements, particularly through dry season production; and d) a stronger emphasis on combined soil and water management to enhance soil fertility, reduce degradation and increase capacity to deliver water to root systems during critical growing periods.
**The way forward**

Promoting climate-smart solutions will require investing in ecosystem-based approaches, new technologies and an enabling environment to enhance and facilitate uptake. Stress-tolerant crop varieties and livestock breeds, improved analytical tools and decision support models and small-scale irrigation technologies suitable for smallholder farmers will all be critical for effective CSA strategies. Other core technologies will be adapting water management, for example rethinking water storage and producing more food per unit of water through boosting rainfed agriculture and managing climate-induced water variability through supplementary irrigation.

Likely partners to get on board will include governments, AfDB, sub-regional and national development banks, private sector organizations and NGOs. Dedicated partnership networks, including the Africa CSA Alliance, West Africa Alliance, Global CSA Alliance and the Ecosystems Based Adaptation for Food Security Assembly (EBAFOSA), will be valuable contributors, as will international agricultural research centres, UN agencies and other development agencies committed to agricultural transformation in Africa. Many of these are already supporting CSA initiatives at all levels and scales, developing technologies aimed at increasing agricultural productivity and adaptation to climate change in Africa, or methods, tools, approaches and information that assist in the adoption of CSA and the development of appropriate policy frameworks. There is a strong case for international institutions helping African governments to access resources from the Green Climate Fund (GCF) to implement CSA.

Better extension services will be crucial to rolling out CSA technologies to farmers. ICTs can play a key role here, as well as in helping farmers to access information on the weather, markets conditions, etc.

**Work stream 11: Strengthening civil society organizations**

Quotes:

*From time immemorial African farmers have been organized into institutions, either on their own or by governments.*

*We are dealing with two main dimensions — capacity-building and commercialization.*

*In 20 years time we may have lost all our youth to the cities, to the mining sector ... even risking their lives to get to greener pastures.*

**Setting the scene**
For decades, national governments and donors have promoted and supported the development of farmers’ institutions in sub-Saharan Africa, including cooperatives, savings and credit societies, farmers’ commodity associations and other types of farmer-based organization (FBO). Such organizations and other civil society organizations (CSOs) can serve as key mechanisms for empowerment. The working definition of FBOs offered by this work stream was “institutions of participatory governance with grassroots structures constituted by smallholder farmers and processors as building blocks, representing their interests, and with a certain level of accountability to them”.

**Opportunities**

Strong growth in Africa’s middle class and a sustained increase in consumer spending, combined with population growth and rapid urbanization, means that today’s markets offer great opportunities for African smallholder farmers if they can meet demands related to larger volumes, consistency of supply and higher quality.

It is widely recognized that better organization of rural communities (including small-scale farmers and others along the value chain), such as through FBOs, will provide the basis for tackling these challenges. A genuine transformation of Africa’s agriculture sector through FBOs will entail fully treating the agricultural sector as a business.

Specific needs of FBOs include developing the capacity of farmer organizations to create a substantive constituency operating within an agreed legal and operational framework (upholding constitutionalism and democratic principles), with a sharpened capacity in developing well researched plans for policy influence to promote a conducive farming business environment. A key aspect is the promotion of farmer-based approaches aimed at enhancing the capacity of farmer organizations in all spheres of their existence, especially in management and finance.

**Pathways to success**

- Agriculture is no longer attractive to people in rural areas, especially young people. Identifying and publicizing success stories is vital to encourage young people to see themselves working in agriculture. One example is the commodity assessment survey conducted in Uganda for the Zirobwe Agriculture Farmers’ Association’s One Stop Center (OSCA) in 2012. The study was undertaken on eight commodities selected by farmers, with the aim of identifying five commodities that demonstrate high market potential and profitability. The focus was on the capacity of the OSCA and its members to exploit market opportunities and build the association into a sustainable business model. The findings of the study were used to guide Sasakawa Africa Association to effectively support strengthening the OSCA into a sustainable
business. This programme took account of farmers’ choices of commodities, as well as understanding the capacity development needs of members and the leadership of the OSCA in transforming into a viable business.

- The Eastern Africa Farmers Federation has recently sent missions to India to learn how Indian farmers are working to achieve commercialization along the value chain. FBOs are not stand-alone actors – they are part of a chain, situated between supply inputs and the market, both of which are generally small and medium-sized enterprises. Improving the capacity of the entire value chain is important to fast-track the work of FBOs. It is crucial to improve market linkages and to create a framework to ensure all stakeholders work profitably together, especially through public–private partnerships.

- It is important not to limit the debate to crops. Africa has a huge potential in livestock, forestry and fishery, and organizations in all of those areas should play a role in the transformation process.

- FBOs need support to train their members in order to improve the quality, quantity and regulatory compliance of produce and products, as well as the consistency and timeliness of production.

- FBOs can improve their capacity to negotiate and their members’ revenue if they are able to achieve profiling of farmers and aggregation to tackle the issues of post-harvest loss, bulking and added value.

[box]
SG 2000 programmes promote FBOs
Sasakawa Africa Association (SAA) is an international agricultural development NGO registered in Geneva, Switzerland. SAA is working with the Carter Center’s Global 2000 Program to establish Sasakawa Global 2000 (SG 2000) agricultural programmes in 15 sub-Saharan countries. Currently, resources are focused on Ethiopia, Nigeria, Mali and Uganda. Working with national partners, SG 2000 programmes have improved the productivity and profitability of smallholder farmers by encouraging the adoption of higher-yielding varieties and enhanced production practices. A focus on the five staple crops – maize, rice, wheat, sorghum and millet – has led to productivity increases through the use of improved technologies such as fertilizers, improved seed and crop management and timely planting, almost invariably by working closely with FBOs. Throughout sub-Saharan Africa, the programme is providing a backstop for dozens of small- and medium-scale private seed enterprises, helping hundreds of agro-input dealers to become established, providing post-harvest handling and storage training to more than 50 000 farmers, helping more than 1 000 rural women to establish agro-processing enterprises, and helping more than 50 000 farmers to organize into formal associations as avenues for collective input acquisition, output marketing, access to credit and enterprise development.
[/box]
The way forward

Access to markets
- Quantity (productivity and production)
- Quality (technology, harvest, post-harvest, storage, international standards)
- Regularity (consistency)
- Public–private partnerships (linking farmers to different service providers)

Capacity building
- Profiling/documentation of success stories
- Exchanges/sharing/learning programme

Aggregation
- Organization of producers
- Bulking

Finance
- Flexible guarantee funds/seed money
- Partnerships
- Lines of credit
- Support FBOs to go from strategies to business plans

Workstream 12: Women in agriculture

Quote: Closing the gender gap in agriculture would produce significant gains for society by increasing agricultural productivity, reducing poverty and hunger and promoting economic growth.

Setting the scene
Women are the backbone of Africa’s agriculture, comprising between 60 and 80 percent of the agricultural labour force. Women are the majority of African smallholder farmers and produce more than 80 percent of Africa’s food. Yet African women hold a meagre 15 percent of land use rights and 1 percent of land ownership. It is estimated that they receive only 5 percent of agriculture extension services and less than 10 percent of available credit.

Agriculture is underperforming in many African countries for a number of reasons. Among these is the fact that women lack the resources and opportunities they need to make the most productive use of their time. This hinders their productivity and reduces their contributions to the agriculture sector and to the achievement of broader economic and social development goals.

When a woman gains more control over her income, she gains more say over important decisions that affect her family, especially her children. Families in which
women influence economic decisions allocate more income to food, health, education and children’s nutrition. Improving gender equality through agriculture could therefore translate into a generation of Africans who are better fed, better educated and better equipped to make productive contributions to their economies, both in agriculture and beyond.

**Opportunities**
The CAADP calls for African governments to commit to spending at least 10 percent of national budgets on effective agriculture investments based on smart, targeted policies that will boost productivity, increase smallholder incomes and help create good jobs and viable business opportunities. Targeted investments in women farmers that close the ‘gender gap’ in African agriculture could yield major benefits by increasing food security and improving livelihoods for Africa’s growing population. It is widely understood that the integration of small women producers and exporters into high-value agricultural value chains for domestic, regional and global markets has a significant role to play in poverty reduction. This is an important strategy for increasing women’s incomes through opportunities to diversify from low-value staple food commodities into higher-value commodities, such as livestock, dairy products, fish, fruits, vegetables, and spices.

**Pathway to success**
The gender fund established by AfDB will be used to strengthen the ability of banks and financial institutions to finance women-led agriculture and agro-processing projects including those described in the recommendations of the AfDB report on *The Economic Empowerment of African Women through Equitable Participation in Agricultural Value Chains* for niche products.

**The way forward**
- Policy-makers need to address the challenges that women face in agriculture, from policy reforms in the sector, to financial inclusion, improved access to infrastructure, capacity building, access to land, access to markets and climate resilience.
- Programmes need to help women overcome social and cultural realities that hinder their progress through partnerships with local civil society and grassroots organizations.
- There needs to be coordination between the ministries of agriculture, finance, gender and central banks. The ministry of agriculture should be accountable for the transformation of women in agriculture.
- Interventions are required for smallholder farmers as well as medium size entrepreneurs to ensure that women can move up the value chain.
• Technology will be a key enabler to improve access to financing and access to information and markets.
• All agricultural programmes should have gender specific indicators, targets and substantial budgets.
• Establish a partnership between FAO/UNWOMEN/IFAD/AfDB to scale up AfDB interventions that support the role of women in agriculture.
• Create partnerships with private sector organizations, women’s groups and cooperatives and civil society organizations to support women and to create market links and move women up the value chain.
• Define the policy dialogue between AfDB and governments around land tenure, gender-specific targets for financing and agricultural programmes and strengthening women’s representation on key decision-making bodies.
• Ensure that gender is reflected across all work streams of the outcomes of this conference.

Work stream 13: Agricultural extension

Setting the scene
More than 90 percent of African farmers are small-scale farmers who and will need a robust support system if they are to produce the yield increases required to drive the continent’s agricultural transformation. Globalization, urbanization, population growth and climate change are altering the agricultural environment, requiring farmers to gather new knowledge in agronomy and related sciences, management, accounting, marketing and business. However, the current extension system is sparse and inefficient, and focuses largely on crop production, particularly cereals. Government extension systems have been underfunded and ‘top down’ and so a large proportion of extension is now carried out by donor-supported non-governmental organizations with little coordination or harmonization. Extension has long been criticized for being biased towards farmers who are wealthy, male, have good market access and controlled environmental conditions, leaving the poorest and most vulnerable struggling to feed themselves and lift their families out of poverty.

Opportunities
There is huge potential for extension and rural advisory services to work with farmers to alleviate poverty, improve food security and nutrition and increase incomes. One of the key opportunities is to empower farmers and build social capital by organizing them into producer groups. This not only makes it more cost-effective to disseminate technologies and information, it also helps to link farmers with markets and gives them a louder voice in negotiations with buyers. In addition to advice on smallholder farming, extension for the poor can impart information on how to benefit from the
rural economy through livelihood diversification. Together with sustainable intensification, diversification will help to reduce pressure on degraded land and conserve soil and water resources.

Market-driven, private sector extension also has potential, but will need effective coordination and accountability. Input suppliers are already an important source of technical information, but are often viewed by public extension workers as unskilled competitors who just want to sell more products. While this may be partially true, input suppliers do pass on useful and reliable information and represent a currently untapped opportunity.

Effective extension and use of new communication technologies can attract new types of farmers and engage the youth in farming as a business. Meanwhile, maximizing the nutritional content of the food that is available through better preservation, storage, processing or preparation practices may have a greater impact on the wellbeing of the poor than trying to increase yields on tiny plots.

**Success stories**

**Success story for Extension work stream**

**A value chain approach to banana in Kenya**

Africa Harvest is a Kenya-based NGO that aims to reduce poverty and hunger among rural communities through the application of innovative technologies and knowledge. Over the past 15 years, the organization has taken a whole value chain approach to its development work, with particular success in production and marketing of tissue culture banana. Tissue culture is an innovative propagation technology that improves productivity and overcomes pest and disease issues in an important staple crop like banana. The whole value chain approach starts with private-sector production of tissue culture banana plantlets, helping to build infrastructure for local or regional nurseries. The approach includes providing micro-credit and creating awareness among farmers, as well as providing demonstrations, training and support for better orchard management and post-harvest handling. Mobilizing and supporting farmers’ organizations is a key part of this. Finally, Africa Harvest supports the development of marketing initiatives to ensure that farmers adopting the technology derive maximum benefits from their investment. See [www.africaharvest.org](http://www.africaharvest.org) for more information.

**The way forward**

Participants agreed that agricultural transformation in Africa cannot take place without effective extension. This will require a range of key interventions.
• Develop national policies to coordinate approaches to extension (public and private) and maintain delivery of high quality information.
• Take a holistic approach to extension to ensure capacity building along the entire value chain and plan for scaling up.
• Maintain a ‘farmer-driven’ approach to ensure farmers can access information that is relevant to them and that their technology requirements are relayed back to feed into agricultural research and development.
• Ensure extension programmes do not exclude women, remote areas and vulnerable groups.
• Encourage decentralization and rural outreach using information and communication technologies; management of extension by local government also ensures there is greater accountability to the farmers.
• Include financial information and advice, e.g. climate risk insurance, in extension messages to build confidence among farmers to access financial services.
• Improve agricultural education and encourage more youth into farming by including new, business-oriented curricula in secondary schools and universities.

Work stream 14: The Blue Economy: Fisheries and aquaculture

Quote: Fish are a renewable natural capital: if they are handled properly, they will never run out.

Setting the scene
The majority of African countries have access to seas and inland waters (lakes, rivers and reservoirs), which have played a key role in human history and have the potential to provide significant benefits, including food and nutrition security, economic and social development from fisheries and aquaculture, marine and coastal tourism, shipping, mining, energy and ecosystem services, such as carbon sequestration, and protection from erosion and extreme weather events. But the capacity of the seas and inland waters to contribute to economic development – the so-called ‘Blue Economy’ – has been seriously compromised by over-fishing (often through illegal and illicit fishing practices), pollution from land-based sources, mangrove deforestation, climate change and ocean acidification. The sustainable use of oceans and inland waters is key for humanity but centuries of open access—the tragedy of the commons—has deteriorated the resource base.

Opportunities
Today, fisheries and aquaculture support up to 820 million livelihoods (or 10–12 percent of the world’s population). More than 90 percent of the livelihoods that
depend directly on fisheries and aquaculture – mostly small-scale operations – occur in developing countries. Three billion people rely heavily on fish for their protein intake. More than 40 percent of the global population lives within 10 kilometres of the coast. Marine ecosystem services – worth trillions of US dollars annually – offer a renewable opportunity to meet human needs, support a healthy and sustainable economy and provide jobs. Aquatic ecosystems are important reservoirs for storing inorganic carbon and inland waters can sequester up to five times the amount of carbon absorbed by tropical forests and serve as important nursery, feeding and reproduction areas for many species. Improving the sector promises significant benefits for employment and livelihoods.

**Success story**

The FAO Blue Growth Initiative builds on existing international legislative and policy frameworks, particularly the FAO Code of Conduct for Responsible Fisheries and its related international agreements, guidelines and plans of action. The initiative aims to catalyze policies, investments and innovations that underpin sustained growth and give rise to new economic opportunities in ecosystem goods and services. It integrates key aspects of economic performance, such as poverty reduction, job creation, social inclusion and community resilience, with those of environmental performance, such as mitigation of climate change, ecosystems and biodiversity restoration. It mobilizes financial and technical support and builds local capacity for the design and implementation of Blue Growth strategies and creates action-oriented policy options and institutions tailored to the respective economic circumstances and constraints of countries. The initiative also promotes partnerships among industry, governments and communities at all levels.

**The way forward**

- An ecosystem approach is needed to right the balance between fisheries and aquaculture production and protection of the environment.
- We need to have a clear understanding of the drivers of illicit trade and piracy. Africa needs to quickly set policies on this or they will be set for her.
- It is critical to address both consumption and market issues.
- The many organizations (community, national, regional, international) addressing the problem need to coordinate their efforts. In addition, countries don’t have the absorption capacity to upscale successful projects.
- Concrete actions are needed by the international community.
- Research is needed to determine how much fish resources contribute to the national economy to increase government appreciation of their value.
- Investments are needed to improve community practice around fisheries and aquaculture so that they are sustainable.
• All investments in the Blue Economy must be climate proofed. At the moment, projects don’t address the impact of climate change and climate variability.
• If countries decide to reduce fishing, they must offer alternatives (e.g. social protection) or incentives to fishers to stop overfishing and/or alternative livelihood schemes (e.g. trade in ecosystem services).
• Community co-management of fish resources alongside fisheries administrations is critical.
• Any benefits need to be shared fairly with local people.
• Fisheries governance needs improving across the board. Governments need to invest in certification markets to move into transparent legal fishing, promoting better practices, investing in improving the resilience of communities.
• Invest in marine protected areas and safe zones to regenerate fish resources.

Work stream 15: Traditional export crops

Quote: We are agreed that processing is very important. But coffee is often processed to form poor quality blends, for example in the DRC. The fact that we can find processed coffee in the market in African countries, it means there is a market for it, so we should develop that market. We should talk about increasing domestic consumption. If we do not go in, that share of the market will be taken by other countries.

Setting the scene
The export of traditional cash crops such as cocoa, coffee, tea, cotton, rubber and cashew nuts has been a driver of economic growth and poverty reduction and a major source of revenue in most African countries. However, the crop subsectors have been losing ground as a result of wide fluctuations in commodity prices in export markets, as well as the boom in mining and oil products that generate foreign income more easily and quickly.

This panel discussion focused on three key crops: cocoa, coffee and cotton. All of these crops have very critical roles to play in employment and livelihoods in Africa, particularly for farmers and entrepreneurs in rural communities. Production in all cases is dominated by smallholder subsistence farming families. Current challenges need to be seriously addressed, including competition with staple food crops and other new uses (e.g. energy crops) and problems with production models (smallholder versus industrial), with implications for land grabbing related to unclear land tenure policies. Other common challenges include low productivity, low quality and food safety concerns, price volatility, inefficient marketing systems, trade barriers and poor
market access, pests and diseases, insufficient research and development, and weak institutional frameworks and advisory services.

**Opportunities**
The cocoa, coffee and cotton sectors all directly and indirectly create employment for many people in a range of sectors of the economy, and contribute to poverty reduction and development more broadly in the agriculture sector. These benefits can be further expanded with the right policies, investments and approaches. African countries continue to perform very poorly in terms of value addition and food processing, so there is huge potential for producer countries to add value and thus to earn much more for their output.

**The way forward**

**Cocoa:**
- Cocoa originated in Latin America, but Africa now dominates in cocoa production. Globally, approximately 73 percent of all cocoa is produced in Africa, with four countries – Cameroon, Côte d’Ivoire, Ghana and Nigeria – producing the vast majority of this. However, yields are very low, and resources and support services are lacking.
- The recent development of the Global Cocoa Agenda, led by the International Cocoa Organization (ICCO), is an important step. This agenda is a roadmap for achieving a sustainable world cocoa economy, with a focus on improved productivity and quality, promoting value addition, encouraging more efficient trade and marketing, and strengthening the institutional framework and support services.

**Coffee:**
- In the past, Africa produced 72 percent of the world’s coffee, but now only about 9.5 percent originates from Africa. Coffee is still a major rural crop in Africa, but due to the onset of major constraints in the early 1990s, when public support was largely withdrawn in the wake of donor-recommended liberalization of the agriculture sector, African coffee production and export has been declining, and domestic consumption is low.
- The Inter-African Coffee Organization has contacted the AfDB to assist with stepping up production and was pleased to receive a positive response based on the AfDB’s interest in coffee production and processing.

**Cotton:**
- African cotton accounts for less than 8 percent of global production currently. The cotton sector remains the main source of income for over 15 percent of the population within the West African Economic and Monetary Union (WAEMU), generating 30–50 percent of Member States’ export earnings, contributing 33 percent on average to GDP, and providing employment for an
estimated 70 percent of active farmers. In response to problems facing the cotton industry, a summit was held in 1999 of WAEMU heads of state and new guidelines were issued for the effective development of the sector.

- In the past, less than 5 percent of cotton was processed. To support the development of the cotton sector, we must support producers and states to process cotton. The cotton agenda was reviewed in 2010, resulting in a target to process 25 percent of cotton by 2020, by mobilizing all actors along the cotton supply chain and pooling all our efforts and all the skills of regional organizations.

The following key points were agreed by all participants at the session as a roadmap for action:

1. Government should take the lead in creating a conducive policy environment to promote the development of agribusiness.
2. Promote value addition/processing driven by African-owned companies, including family-owned small and medium-sized enterprises (SMEs).
3. Reduce post-harvest losses, and promote consumption in Africa of African-origin crops that have been traditional export crops.
4. Empower youth and women to play leading roles in the value chains.
5. Facilitate access to affordable credit, and develop/support the establishment of companies that manufacture farm inputs (seeds, fertilizer, pesticides) and agricultural equipment.
6. Develop better market access and expand intra-African and international trade, through improved logistics, transportation and warehouse receipts-based commodity exchanges.
7. Encourage the development of thriving producers’ organizations (cooperatives), and efficient and effective delivery of agricultural extension.

The tools for the implementation of commodity roadmaps should include the following:

1. Key performance indicators
2. Timeline for implementation
3. Monitoring process
4. Continuous improvement and evaluation.

These tools should be analysed with respect to the following key components of the implementation of a roadmap:

1. The vision and clearly articulated objectives
2. The people
3. The governments
4. The institutions
5. The environment.

Work stream 16: Cereal crops

Setting the scene
Cereals (including rice, maize, millet, sorghum and wheat) are important staple foods in Africa but suffer from low productivity, commonly yielding less than half the global average. Countries aiming for self-sufficiency in cereal production will need to overcome a range of constraints if they are to feed their people and stimulate economic growth based on agro-business development. Rapid population growth coupled with decades of low investment in agriculture and infrastructure make this journey an uphill struggle. At the same time, climate change is putting additional stress on land and water resources and the risk of extreme climate events is deterring farmers from investing in the future of their farms.

Opportunities
There is huge potential for Africa to eliminate poverty and hunger, even in the dry regions where food insecurity is most acute. Achieving this goal will depend on growing appropriate crops, using the right technologies and putting in place an enabling policy and institutional environment. Rapid population growth, urbanization and the emerging middle classes are changing the demand for cereal crops and creating new markets based on value-addition. Markets are also diversifying through the expansion of mixed crop–livestock systems, which are creating demand for dual-purpose food and feed crops.

Success stories
Several projects have helped to increase maize productivity in sub-Saharan Africa over the last ten years. These include Drought Tolerant Maize for Africa (DTMA), Improved Maize for African Soils (IMAS), Water Efficient Maize for Africa and Nutritionally-enriched Maize for Ethiopia. DTMA has developed and released more than 180 distinct drought-tolerant varieties, producing and delivering nearly 52 000 metric tonnes of seed across 13 countries in 2014 alone. Meanwhile, partners in IMAS have released 11 nitrogen use-efficient maize hybrids, producing 2 300 metric tonnes of seed in 2014.

The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) is working to boost the productivity of sorghum and millets, which are vital for food security in the dry regions. Harnessing Opportunities for Productivity Enhancements or HOPE has demonstrated that improved inputs in the form of new varieties and better agronomic practices can help farmers to more than double their yields.
Senegal to achieve rice self-sufficiency by 2017

Senegal has made remarkable progress in boosting rice productivity, raising production in the Senegal River Valley from 400,000 to 900,000 metric tonnes in just one year. Working with AfricaRice, the Accelerated Programme for Agriculture in Senegal is taking an integrated value chain approach to address access to credit, water management, agricultural research and extension, market access and mechanization, aiming to put an efficient supply chain in place. If these advances can be sustained, Senegal will become self-sufficient in rice production by 2017 – a major achievement.

In Nigeria, the efficient delivery of inputs to rice farmers combined with other interventions saw a sharp growth in rice production. Six million rice farmers were reached with 12.5kg each of improved rice seeds and two bags of fertilizer during the period 2012-2014. Yields increased from 1.5MT/ha to over 4MT/ha on average and national paddy rice production rose by an additional 7 million MT during the three year period. The number of integrated rice mills capable of producing import grade rice rose from one in 2011 to 24 in 2014; the total capacity of import grade rice, now stands at 800,000 MT/year. The nation reached 85 percent sufficiency in rice production and 1.7 million jobs were created.

The way forward

Participants discussed the key challenges facing cereal production and agreed on the priority interventions that will boost cereal production as part of Africa’s agricultural transformation.

- Improve farmers’ access to quality inputs, including more affordable fertilizers and seeds of crop varieties with resistance to pests, diseases and extremes of climate. This includes accelerated seed multiplication schemes for the five priority cereals. (One participant proposed that barley should be added to the list.)
- Mechanize cereal crop production – this involves better access to credit so farmers can invest in tractors and other field equipment, which should be designed to be energy-efficient.
- Attract the private sector to invest in processing equipment, particularly for processing rice from paddy to meal rice. Attracting private sector investment will depend on securing the necessary funds from the public sector to develop rural infrastructure.
- Apply a regional focus: target the different agro-ecological zones with solutions that are appropriate and adapted to local conditions.
- Increase the scale of initiatives that work through partnerships among international and national agricultural research institutions, the private sector and the government.
- Develop market penetration strategies, identify specific entry points and link these to the value chain. Plan ahead to take account of the changing patterns of consumption arising from increasing urbanization.

**Work stream 17: Agricultural Insurance**

Quotes:

*There is a thin line between humanitarian aid and agribusiness.*

*ARC is an extremely important instrument – not just in a humanitarian sense, but in providing security for investors and thus the very basis for development.*

*A better future requires a good understanding of both the past and the present.*

**Setting the scene**

At the national level, natural disasters such as droughts and floods reduce income and affect economic growth. It is estimated that a moderate drought could have an estimated adverse impact of 4 percent on the annual GDP of a country such as Malawi, with even larger impacts for bigger events. As a result, production fails at the community level and poor households are often forced to adopt short-term survival strategies in the face of a shock that can undermine their long-term resilience, food security and economic capacity. Farmers wanting to invest in their farms for the next year are constrained in their access to finance and better-yielding inputs and technologies, as risk-averse lenders and agribusinesses limit their exposure to potentially risky clients.

**Opportunities**

Index insurance – linked to an index such as rainfall, temperature, humidity or crop yields, rather than actual loss – offers a solution to some of the problems that limit the application of traditional crop insurance in rural parts of developing countries. One key advantage is that the transaction costs are lower. In theory at least, this makes index insurance financially viable for private-sector insurers and affordable to small farmers. Another important advantage is that index insurance is subject to less adverse selection and moral hazard than traditional insurance.

Over the past ten years, a wide variety of applications have been identified, and in some cases put into practice, at three levels:

- Micro level – insurance for individuals
- Meso level – insurance for businesses and financial institutions
- Macro level – insurance for governments.
These approaches have created significant opportunities for index-based instruments but also significant debate and some confusion around the most appropriate applications of these products. The spectrum of agricultural insurance solutions is broad, from traditional indemnity-based products (e.g. multi-peril crop insurance) to different forms of index insurance (e.g. weather, satellite-based vegetation indices, area yield index).

**Pathways to success**

- 2014 saw the launch by the Syngenta Foundation of Acre Africa (Agriculture and Climate Risk Enterprise Ltd), a registered insurance surveyor in Kenya, an agent in Rwanda, and with registration ongoing in Tanzania. The company was created to advise insurers on protection for African smallholders, and continues the Foundation’s original drive with the ‘Kilimo Salama’ project to reduce the burden of weather and other risks for small farmers. This is the first time in its over 30-year history that the Foundation has spun off a project to become a new company. Among other products, farmers purchasing certified seed can choose the replanting guarantee. A seed company includes the insurance premium in the price of the seed. Each bag contains a scratch card with a code. To register for the insurance, farmers text the code to Acre Africa. The replanting guarantee begins at registration and ends after two weeks. If there is a drought in that period, the farmer receives an SMS voucher for a new bag of seed to replant within the same season.

- On the supply side, more specific products (e.g. index/revenue products) are needed to overcome specific operational challenges within different types of cropping system (e.g. cereals versus perennials) at the macro, meso and micro levels.

- Insurance products are based on accurate data, which is often lacking. There is a need to approach data collection creatively. For example, as part of the certification process, a cocoa exporter may already provide yield estimates that could substitute for long-term data collection. Where data on disease spread in plantation crops, for example, do not exist in a specific locality, modelling and extrapolation may offer an adequate substitute.

- Financial institutions need a change of mindset to become excited about the huge potential of the agricultural market. There is a need to find a way to break the banks out of their set business model. (And the same applies to reinsurance.)

- On the demand side, there is a need for ‘sensitization,’ at all levels but especially the micro level, to inform potential users about the benefits and possibilities.
• Access and participation: scale-up will be vital if insurance companies are to regard small-scale farmers as viable customers. For example, individual farm assessment visits are not economically feasible for insurance companies. Alternative points of sale could include mobile technologies – for example, banks are able to pre-score individuals for loans via mobile phone, based on the phone companies’ own credit records.
• Incentives: there is also a case for government support – for example, insurance as collateral for credit; premium subsidies (especially in the first few years of capacity development); and a conducive regulatory environment.

[box]

ARC – safeguarding against climate change

In 2012, 26 African Union member countries came together to establish the African Risk Capacity (ARC) agency and its financial affiliate, a mutual insurer capitalized at $200 million by the UK and German governments with interest-free loans. These macro products directly insure governments, but a significant amount of upfront work is required to make them effective. In order to be able to access ARC’s insurance, for example, governments must integrate these products into their disaster operations by developing contingency plans on how payouts will be used, conduct technical work to design an index that accurately predicts governments’ needs, and pay a premium in order to enter into the contract. The ARC Agency provides capacity building to countries to help them complete these requirements and join the ARC insurance pool.

In September 2014, as satellites detected a significant rainfall deficit in the Sahel, Senegal, Mauritania and Niger were able to use ARC’s Africa RiskView software (www.africanriskcapacity.org/en/africa-risk-view) to determine the areas and communities that would be worst affected. Knowing that their insurance policies, for which the countries paid a combined premium of $8 million, would probably pay out, they updated their drought contingency plans and prepared to assist vulnerable populations as soon as possible.

By the end of the West African agricultural season in January 2015, ARC had paid out more than $26 million, while a UN aid appeal was still being formulated. The money, used to buy livestock fodder and staples – primarily from local producers – benefited roughly 1.3 million people.

[/box]

The way forward

Distilling the examples above, it was recommended that AfDB should:
• Embed an agricultural insurance/risk management component in all AfDB-funded agricultural projects; other elements, such as processes for collecting the data/statistics needed for actuarially sound pricing, would naturally follow from this basic requirement
• Support the rapid digitization of insurance product distribution to improve data collection and reduce costs
• Consider subsidizing premium costs at macro, meso and micro levels to accelerate take-up by countries, institutions and individuals.

Work stream 18: Agricultural industrialization

Quote: We must stop selling cocoa beans and start selling chocolate bars.

Setting the scene
Efforts to eliminate poverty and stimulate economic growth in Africa depend largely on developing the agriculture sector. The continent has huge untapped land resources and a large labour force living predominantly in rural areas. However, there is a powerful case for focusing not on an agriculture-led growth programme, as has been the case in the past, but on an agro-industrial development strategy in which policymakers, donors and – arguably most importantly – entrepreneurs target the entire value chain. Agribusiness is labour intensive, especially in terms of creating jobs in value-adding, agro-processing activities, particularly for those who will inevitably leave the land as economic development proceeds. Demand for value-added products will rise at the expense of unprocessed bulk commodities, underlining the need for close coordination among policy-makers from agriculture, industry, manufacturing, trade, transport, finance, environment and science and technology.

Opportunities
African countries currently export a range of raw food materials (e.g. cocoa, coffee, groundnut, soybean), which are processed into value-added products elsewhere. Increasing demand for fruit, vegetables and processed food from growing numbers of middle-class urban consumers means the time is ripe for the expansion of African agro-industries.

Increasing the size of the agro-processing industry would not only create jobs, it would also address the continent’s high level of post-harvest losses. Farmers growing perishable products like fruit and vegetables can see up to half their yield wiped out because they are not linked to good markets, storage and processing facilities. Furthermore, post-harvest loss has been under-recognized and poorly funded in the past, receiving a paltry 5 percent of agricultural research investment over the past 30 years, according to the Rockefeller Foundation. However, rising public and private
investment is now beginning to address this issue and large private sector companies are increasing their sourcing from smallholder farmers.

**Success stories**

While buyers and farmers view post-harvest loss as a cost of doing business, many are unaware of the full extent of the losses taking place. Efforts to address food security are only now waking up to the fact that post-harvest losses compromise both the profitability and the long-term sustainability of value chains. Initiatives designed to reduce post-harvest loss in Africa (e.g. Yam Improvement for Income and Food Security in West Africa, a partnership between the International Institute for Tropical Agriculture and the Alliance for a Green Revolution in Africa) are reaping impressive rewards in terms of food security and income, especially for the poorest farmers.

[box]

**Small innovation – large impact**

Cowpea is susceptible to high post-harvest losses due to infestation with weevils, which can affect up to half the crop. Researchers from Purdue University, backed by the Gates Foundation, have developed an inexpensive triple-layer bag to protect cowpeas during storage, avoiding the need to apply expensive and potentially harmful pesticides. Preserving the quality of the harvest boosts food security and allows farmers to sell their surplus when prices are highest. Over a million bags have been sold and the farmers using them have increased their annual incomes by up to US$150 per household.

**The way forward**

Participants discussed the role of industrialization in an African agricultural transformation agenda, agreeing that the following actions will put African agro-industry on the world stage:

- Concentrate on the areas of greatest potential and growth corridors by establishing staple crop processing zones, agro-industry clusters, etc. Improved rural infrastructure in these areas will help to attract private investment.
- Create incentives for developing storage systems and infrastructure along highways and railways.
- Mechanize farm operations and produce high value crops with stable yields to support the development of agro-industry.
- Promote inter-agency collaboration at country level.
- Reduce the cost of doing business and provide incentives through lower taxes, subsidies, low-interest loans, etc.
- Strengthen public–private collaboration through providing capacity building.
• Establish a unit to promote new technology, advocate best practices and disseminate information.

Work stream 19: Unlocking land potential

Quote: How do you unlock the land if you can’t manage it?

Setting the scene
Africa holds enormous untapped promise for expanding food production, yet most national agricultural investment plans (NAIPs) do not really address how to unlock this potential. This session looked at two key aspects of any agricultural transformation strategy for Africa: land tenure and agricultural intensification.

Security of tenure is a major problem in Africa – particularly for women – leading to conflict, land degradation and unregulated development. Customary land rights often go unrecognized. Weak or inappropriate governance and unresponsive policies are also major constraints. Neither CAADP nor the NAIPs give much attention to the issue of land tenure and governance. Building resilience to climate change relies on farmers having an interest and incentive to invest in their land - whether it’s soil and water conservation, irrigation, or smart agro-forestry systems. In a world of greater rainfall volatility, more secure rights matter even more. Agricultural intensification is a key to increasing farm yields, the first step towards enhancing competitiveness in agricultural value chains. Yet intensification requires investments in land, water and soil fertility by farming communities to ensure sustainability and a continuous supply of produce, even under poor growth conditions.

Opportunities
Land is rising in value throughout Africa. More than a productive resource, land is coming to be seen as a major financial asset. In Africa, most governments hold rights to land and natural resources in trust for their people. It is therefore critical to specify the recognition given to customary rights of the people and how the government divides up responsibility over land administration.

There is a great deal of innovation taking place across the continent in the design of land policy, decentralizing rights administration, recognising customary use and documenting land transactions, such as tenancy, transfers and share cropping. This innovation needs framing by government to ensure it delivers equitable, recognised services.

Success stories
Various initiatives are engaged in addressing the management of natural resources with a growing commitment from governments and other actors. Examples include the CAADP process, which deals in part with soil and land management; AGRA’s Soil Health Programme; successful fertilizer subsidy programs in countries, including Malawi, Nigeria, and Ethiopia; regional policy blocs, e.g. ECOWAS; ongoing initiatives by the international research community, including CGIAR centres and donor organizations, including the Bill and Melinda Gates Foundation and USAID.

The AU-ECA-AfDB Land Policy Initiative, established in 2006, has developed a framework and guidelines on land policy in Africa. The guidelines are now assisting AU Member States to develop or review their land policies using a suite of tools developed by the initiative as well as to implement and evaluate these policies.

**The way ahead**

- Learning and exchange of experience are at the heart of making progress on land rights management. Great progress has been made over the last 10 years, with the Land Policy Initiative and a wide network of legal professionals and civil society groups focused on legal empowerment.
- It is vital to invest in training public servants to address land tenure issues in a fair and transparent fashion.
- The approach to land policy will differ, depending on a country’s characteristics (land and population size, percentage of urban squatters on public lands, etc.).
- Countries need to develop land policies and reform institutes. Tools and guidelines are available to help countries identify the land tenure approach that best suits their needs and circumstances.
- The time is right for African countries to develop strategies for agricultural intensification. The specifics of these strategies will depend on country circumstances but in most cases will call for strong political leadership, media campaigns, building the resilience of farmers to climate change, new technologies and access by farmers to credit.
- At the regional level, support is needed to build the capacity of regional economic commissions to implement programmes on land tenure and governance.
- At the level of the African Union Commission, there is a strong commitment to:
  - use smart subsidies to increase yields;
  - develop comprehensive land policies that are inclusive and provide equal access and land ownership to all their respective citizens;
  - build adequate capacity (human, institutional, financial) for land policy development;
• make use of the AUC and other approved tools and frameworks to guide national land policy process
• encourage the banking sector to lend to smallholder farmers through guarantee schemes to avert the need for collateral;
• support the development of agricultural insurance schemes

Sustainable land management must be comprehensive and inclusive. Such a system must include women in all of their capacities across the value chain.

There are high expectations of what the African Development Bank can do to support these efforts.

Work stream 20: Roots and tubers

Quotes:
“Root and tuber crops are Africa’s food insurance.”
“Cassava is the number one poverty fighter.”
“In Steven Haggblade’s terms, roots and tubers are not roller coasters but rocket ships.”
“Africa is the global leader in cassava production – but exports the least.”
“Technologies will go nowhere without the markets – both input and output.”
“Now is the time to put away the pilots and start to work at scale.”

Setting the scene
Root and tuber crops – cassava, sweet potato, white potato and yam – are the most important food crops for direct human consumption in Africa. These four crops are grown in varied agro-ecologies and production systems, contributing to more than 240 million tonnes annually on 23 million ha. Their aggregate value exceeds that of all other African staple crops and is much higher than the value of all cereal crops combined.

Root crops are produced mainly by subsistence farmers, including many women, using traditional, often labour-intensive farming practices. Although they provide opportunities for generating income, improving food security and enhancing the diversity of the rural economy, low productivity rates threaten the livelihoods of millions of smallholder farmers.

Opportunities
There are many compelling reasons for encouraging the development of these humble root and tuber crops for sustainable food production in Africa:

• They produce more food than other crops per unit area of land.
• Potato and sweet potato are short-cycle crops (3–4 months), well suited to double-cropping, even in rainfed systems.
Yam and cassava, although they have longer cropping cycles, are vital in the annual cycle of food availability due to their broader agro-ecological adaptation and in-ground storage capability.

- Root crops efficiently convert natural resources into high levels of caloric energy, almost double that of wheat and rice.
- They are a cheap but nutritionally rich staple food that contributes protein, vitamin C, vitamin A, zinc and iron to meet the dietary demands of the region’s fast-growing towns and cities.
- They have high demand in local, national and regional markets.
- They are far less susceptible to the large-scale market shocks and price speculation experienced by more widely traded staples (as seen in the food crisis of 2007–08).

Opportunities for root and tuber crops are highlighted by the significant growth of the sector in recent years. The yellow-root cassava and orange-fleshed sweet potato are excellent examples of how research can be transferred to development on a continent-wide scale. There is a tremendous opportunity for transferring experiences across the root and tuber crops, for example with accelerated breeding methods for improved varieties; improving seed systems; sustainable intensification of production; nutrition and behavioural change; upgrading value chains; the evidence base, policy options and partnership models for going to commercial scale; and capacity development, both institutional and human. Women play a critical role in the production of these crops, so a strategy for the sector is also a strategy for women’s economic empowerment.

**Success story**

The use of biofortified orange-fleshed sweet potato (OFSP) rich in beta-carotene, when introduced along with nutrition education at the community level, is a proven cost-effective strategy for providing vitamin A at high levels of bioavailability to vulnerable populations, in particular young children, pregnant women and nursing mothers. OFSP production from 500 m² of land can provide sufficient vitamin A for a family of five and is a good source of energy, a number of B vitamins, and vitamins C and K. Building on this evidence, the International Potato Center (CIP), national agricultural research systems, and research and development partners at national, regional and global levels are working together to bring the economic and nutritional benefits of sweet potato to African farmers and consumers. As a result, nutritious and resilient sweet potato varieties have been adopted by at least 1.1 million smallholder farmers in Africa over the past 5 years. With further support, this success can be scaled up to a further 10 million households over the coming ten years.

**The way forward**
Cassava
Five major cassava value chains are proposed for industrialization:
- High-quality cassava flour (HQCF) – a composite flour for bread, biscuits, snacks, pasta
- Starch – food and beverages (culinary cubes, drink powders)
- Cassava chips – animal feed
- High-fructose cassava syrup (HFCS) – sweeteners and sugar replacements
- Ethanol – spirit distilling.
Production should be expanded to meet domestic and industrial demand and export markets, accompanied by the promotion of industrial applications of key value chains (HQCF, livestock feed, starch, ethanol, etc.); Encourage the involvement of large-scale farming as a driving force for industrialization; and encourage private sector investment and engagement.

Yams
Four main areas for yam development were proposed:
- Customer-oriented robust yam variety development for accelerated impact (see, e.g., the AfricaYam project, which is building capacity in yam breeding)
- Improving the seed sector for yam (see, e.g., the project Community Action in Improving the Quality of Farmer-saved Seed – CAY-Seed – which is working with smallholder farmers in Ghana and Nigeria)
- Disseminating technological innovations for raising productivity, reducing pre- and post-harvest losses and minimizing production costs
- Expanding the production and marketing of diverse traditional and novel yam-based products.

Potato
Potato is the fastest expanding crop in Africa. As a major intervention for increased productivity, farmer-oriented approaches to rapidly access quality seed are recommended in the following areas:
- Breeding
- Seed production
- Integrated crop management
- Protocols for seed quality control
- Market development
- Scaling strategies

Sweet potato
The following approaches to scale up the successful adoption of orange-fleshed sweet potato (see Box) are recommended:
• Accelerated breeding methods and tools
• Guidelines, technologies, and diagnostic tools for improving OFSP seed systems
• Guidelines and technologies for sustainable OFSP intensification
• Models and tools for nutrition and behaviour change
• Models, tools and technologies for upgrading OFSP value chains
• Evidence base, policy options and partnership models for going to scale
• Capacity development.

In addition to the pathways recommended above, the highest priorities for quick wins were identified as:
• Substitution of wheat in bread with high-quality cassava flour (10–40 percent)
• Development of the cassava starch value chain
• Development of a high-quality and healthy yam seed system
• Promotion of the use of orange-fleshed sweet potato.

Work stream 21: Oilseeds and cowpeas

Setting the scene
Staple crops in much of sub-Saharan Africa (SSA), oil seeds – soybean, shea and groundnuts – and legumes – cowpeas – provide a cheap source of protein, as well as generating jobs and revenue, especially for women. Soybean also has considerable potential for arresting declining soil fertility, with rising global prices helping to raise rural incomes. Despite their importance to food security and household income, challenges include a range of abiotic stresses, pests and diseases, market issues and lack of effective production and post-harvest technologies. However, technologies do exist to address most of these problems, and pilot programmes launched in various SSA countries have produced good results. These interventions have been proved to increase grain yields, control pests and diseases, minimize the effects of drought and connect producers with markets. A key objective now is to roll out these initiatives throughout the value chain of farmers, processors, traders, and consumers.

Opportunities
Despite growing demand, SSA produced only 2 million tonnes of soybeans in 2011-2013, and there is strong potential for this share to be substantially increased, by raising yields, especially as a result of higher adoption rates of improved varieties and better agronomic practices. Projections show that Africa will be one of the main sources of growth in world soybean demand, opening up opportunities for the continent to realize considerable foreign exchange savings through increased domestic production. Satisfying this demand will be contingent on major research and development investments, aimed at raising the productivity, profitability, and competitiveness of smallholder soybean production.
Africa accounts for 40 percent of groundnut area cultivated, but contributes just 26 percent of world production, due to low productivity. So here too there is scope for increasing market share, including exports. A nutritious food that is rich in protein, oil and several micronutrients, increased consumption of groundnuts will bolster the health of rural communities, as well as incomes. At present, groundnuts account for up to 50 percent of rural cash earnings and are a major source of employment. Groundnut haulms can be used as cattle feed either in fresh or in dried stage or for preparing hay or silage. The oilcake meal remaining after oil extraction is used as industrial raw material and also as a protein supplement in livestock feed rations. Being a legume crop, it helps to fix atmospheric nitrogen in soil.

Sub-Saharan Africa accounts for about 95 percent of global cowpea production, with more than 80 percent of Africa’s share produced in West Africa. Poor households in Nigeria account for the production of over 65 percent of cowpea, so the poor stand to benefit most from research and extension. Cowpea offers multiple benefits to smallholder farmers in terms of food, cash income, livestock feed and improved soil fertility. New short-duration and pest-resistant varieties hold promise for raising production levels, which still fall way below their potential, despite some signs of recent growth. With interventions to promote and organize the supply chain and primary processing, there is scope to develop diverse food products ranging from breakfast and weaning foods to the confectionary industry. Further efforts to develop consumer acceptable products will expand markets for cowpea.

For soybean and groundnuts (and sometimes cowpeas), there are good opportunities for value addition by processing and manufacturing and retailing feed, food and industrial products.

Shea butter made from the nuts of the shea tree is considered one of the promising value chains, offering excellent opportunities to increase income generation for rural women. Currently, its potential production capacity is not fully exploited because producers are not totally involved in the value addition sales of the nuts or butter. This oilseed is considered to be the second after palm among the oil crops of Africa.

Success stories

- In countries where malnutrition is a major problem, groundnut-based, ready-to-use therapeutic food products such as ‘Plumpy Nut’ peanut butter has helped to save the lives of thousands of malnourished children.

- In Africa, women are heavily involved in grain legume production, processing and marketing, so are likely to benefit from any growth in this sector, with positive repercussions for their children. In Niger, Nigeria and Senegal, cowpea
processing is almost exclusively carried out by women, who produce a variety of products that are sold as street food.

- Increased demand for shea butter in Asia, the European Union and the United States is having a significant impact on rural communities in West Africa, especially women. In Ghana, the fledgling shea industry is already earning an annual US$30 million of foreign exchange, a figure expected to triple when production potential has been fully exploited.

- The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) has developed the ELISA method for aflatoxin analysis and quantification in groundnuts, setting up laboratories in Malawi, Mali, Niger and Nigeria. In recent years, at least 1,000 farmers and 20 extension agents have benefited on an annual basis from training in crop management practices, aflatoxin management and seed production. More than 100 rural entrepreneurs have received training in small-scale seed businesses and marketing.

- The International Institute of Tropical Agriculture (IITA) has developed improved varieties of cowpeas that tolerate insect pests, pathogens, and parasitic weeds and give higher yields in intercropping settings.

- In tandem with local manufacturers, IITA has developed low-cost processing machines to cut high post-harvest losses in cowpeas. These can be purchased locally by individuals or farmers’ groups.

**BOX**

**Higher household incomes, better food and nutrition security**

Adopting a value chain approach to technology development and dissemination for soybean has produced impressive results in Nigeria, highlighting the potential for increasing soybean production and productivity. A programme designed by IITA developed and disseminated improved varieties, together with household level soybean processing technologies and product development. More than 80 soybean-based agro-processing businesses are now operating in Nigeria, with most of the activities run by women, who handle much of the soybean production, processing, and marketing activities. In doing so, they have raised household incomes, as well as food and nutrition security. A campaign to promote soybean recipes has led to increased local trading of soybean food products, producing a marked improvement in the nutritional status of many Nigerians, particularly infants and schoolchildren.

**The way forward**

A four-point strategy has been drawn up by IITA and partners to: (1) facilitate efficient legume seed delivery systems for smallholder farmers; (2) validate and promote technologies that improve the productivity, competitiveness and profitability of oilseeds and legumes; (3) expand post-harvest processing and market opportunities; and (4) improve related capacities and infrastructure to enhance knowledge sharing.
The plan is for initiatives to be implemented in at least 20 countries by multi-disciplinary teams and with a wide range of partners, including the private sector, using innovative systems approaches. Expected benefits include increased crop productivity and value addition, which will create job and income opportunities for rural communities and reduce poverty levels in SSA.

Meanwhile, ICRISAT research programmes in Malawi, Mali, Niger and Nigeria are making good progress in developing improved groundnut production and aflatoxin management technologies. Aflatoxin is a major constraint to groundnut exports to markets in Europe and the USA, as well as a serious threat to local health.

Setting up a Foundation Seed Enterprise dedicated to production and marketing of foundation/basic seed could address problems of improved seed access for all oilseeds and legumes discussed here, and support the efforts of seed companies interested in commercializing improved publicly developed varieties. IITA has also piloted initiatives to promote seed production through community-based schemes, and there is room for this approach to be replicated. The introduction of market information systems is recommended to improve access to markets by capturing information on product standardization, price and pricing, inventory levels, product range, utilization possibilities and alternative markets.

**Ministerial Dialogue on Agricultural Enterprise Processing Zones and Agricultural Corridors**

In this session, ministers of agriculture and finance met to share their experiences with agricultural enterprise processing zones (AEZ) and agricultural corridors. A number of countries (DRC, Burkina Faso, Guinea, Mauritania, Republic of Congo, Zimbabwe, Togo, Mali, Zambia, Egypt, Tunisia, Gabon) shared their experiences – including some notable successes – with developing and implementing rural areas for agri-business zones. There was a strong consensus with regard to a number of conclusions:

- Good planning, political will and government support are critical to the success of agricultural enterprise processing zones.
- Such zones have a vital role to play in agricultural transformation in Africa.
- The development impact of early wins is very significant, creating a strong case for supporting more such processing zones.
- Agricultural corridors can benefit multiple countries (including through economies of scale) but production decisions should be based on a country’s own comparative advantage.
- While it is up to governments to create an enabling environment for the zones, agri-business should be left to the private sector.
• Ensure that the AEZ/agricultural corridors will support regional trade.
• The infrastructure developed for a processing zone (electricity, water, roads, etc.) can have important spin-off benefits for surrounding villages.
• A platform is needed to enable African countries to share their experiences with agricultural enterprise processing zones to enable countries to quicken the pace of transformation while avoiding the pitfalls encountered by others.
• AfDB can play a convening role in supporting experience sharing among different countries.

**Work stream 22: Science, technology and innovation**

**Quotes:**

“Innovation and creativity come from problem solving, so we need the problems. If you take them away and solve them for us, you leave a sense of incompetence. We need to build this capacity. Africa wants to be globally competitive. Subsistence and survival are very costly; you have no chance to compete.” – **Joe Okpaku (co-convenor)**

“The key is application and use, otherwise the science and technology has not been translated into impact. Researchers carry on doing R&D without thinking about how the results will be applied, how products will get to market. So from the start of the research, we need to think about how this is going to get to the user.” – **Dr Lois Muraguri, GALVmed**

**Setting the scene**

It is widely believed that Africa is the continent of the 21st century. Africa has the capacity to feed itself and to export food to other countries, considering its rich natural resource base and young labour force. Information and communications technology (ICT) and biotechnology innovations are also already being applied in Africa for the transformation of agriculture, and these can be developed and scaled up. The challenges that have so far prevented Africa from achieving agricultural transformation stem mainly from the lack of political will and support for good policies that promote investment in agricultural research and development (R&D) and increased productivity. Low productivity also results from limited use of existing technologies such as improved seeds, fertilizers, irrigation and mechanization, as well as degradation of soils, post-harvest crop losses and wastage.

**Opportunities**

The population of Africa will double to two billion by 2050. Africa has to take this opportunity to reach a large and growing market on the continent, and must meet the challenge of feeding the population with sufficient nutritious food. Experiences and lessons learned from developed countries such as European nations and the USA, and from developing countries such as South Africa, India, China, Brazil and Argentina, which have made remarkable progress in agricultural transformation, mean that
Africa need not reinvent the wheel, but can learn from these experiences, consolidate current gains, and embrace quick wins to achieve agricultural transformation.

Africa should invest more in R&D in agricultural science and technology, which should cover the whole spectrum – from land use, soil fertility and cultivation, land and water conservation and management, seed development (including biotechnology), planting techniques, harvesting, storage, logistics, processing and other value addition and marketing, to the more sophisticated areas of telemetrics, ICT, remote sensing and satellite imagery, robotics, research techniques, use of renewable energy and more. Investment should also include expertise in the relevant pure sciences and the culture, sociology and even anthropology of agriculture.

Success stories
Four key technologies were presented during the panel discussion session and received the support of expert participants. These technologies have been shown to be effective and have the potential to help transform agriculture in Africa, but they require investment and support to be taken forward and scaled up.

1. Tissue culture (TC): TC allows for rapid multiplication of vegetatively-propagated crops such as cassava, banana and sweet potato. The benefits include: large volumes of seedlings for introducing improved breeders material; disease-free seedlings that are uniform and easy to mechanize; vigour that improves yield by 30 percent and reduces the crop maturity time; farming as a business helps with investment planning and marketing planning. The bottleneck to expanding the use of TC is that dedicated labs need to be established.

2. Somatic embryo-ogenesis: TC is not effective for tree species, so somatic embryo-ogenesis is the way forward for crops like coffee, palms, rubber, cocoa, tea and others. This can be used to start new plantations in new areas. It is a tested technology that works, but it is locked up in the private sector; public–private partnerships are needed in order to set up labs.

3. GM technologies: The major benefits of GM include cost savings (e.g. on pesticides), environmental protection (i.e., less use of chemicals/pesticides), and new opportunities for nutritional enhancement. Political will and capacity-building are needed for uptake of GM technology, including involvement of the private sector.

4. Virus diagnostic technologies: These technologies are important integrated pest management (IPM) tools to prevent virus dissemination through planting materials. This is a seriously neglected area of technology except in South Africa. We need a regional diagnostic laboratory.
The way forward
How can African agricultural research benefit from greater funding to assist in the development of new technologies to boost productivity? Are there examples of quick wins, technological innovations that could be quickly replicated in Africa? In addition to the need to invest in the four technologies highlighted above, the following imperatives emerged in the course of the panel discussion:

- Political will and leadership are critical in order to move forward and invest. Scientists should be able to provide precise information to help decision-makers make good decisions based on science, not politics.
- The technology can come from anywhere in the world, but we need to have the capacity to adapt it for production in Africa to reach Africans, and it must include farmers/producers in the process.
- Science, technology and innovation must be part of the whole value chain; start with the low-hanging fruit and scale it up.
- Innovations must be linked to extension to get them to the farmers and the marketplace.
- Knowledge, capacity and R&D are key to eliminating poverty in Africa. We must develop effective programmes to train and integrate our youthful population to play a role in agricultural technology R&D, dissemination and relevant agribusiness development.
- Africa spans the equator; all types of crops can be grown here. Africa can feed itself and the world. But irrigation will be key to feeding the population; in Africa only 4 percent of land is irrigated compared to 50 percent in China.
- What can the AfDB do? Considering the 10 percent to be allocated for agriculture as agreed in the Maputo Declaration, one suggestion is that 10 percent of the 10 percent should be allocated for R&D.

Work stream 23: Livestock and dairy

Setting the scene
Livestock are fundamental to rural food security, nutrition, incomes and resilience in smallholder crop–livestock and pastoral systems throughout Africa. In most countries, 60–80 percent of rural households keep livestock, which also provide a useful cash reserve, valuable organic fertilizer (manure) and animal traction. Although Africa historically has been almost self-sufficient in ruminant meat, and the dairy, pork and poultry sector has expanded in recent years, the continent will fail to meet future demand if it does not significantly increase the production and productivity of its livestock sector. While advances have been made in productivity gains through genetic improvement – markedly in smallholder poultry production – major constraints remain to be overcome. These include weak market links, poor rural
infrastructure, lack of quality feed and insufficient animal health services. Furthermore, many countries lack enabling policies to support private investment.

**Opportunities**

Growth in demand for the volume and types of food derived from animals is being stimulated by rapid population growth, gains in real *per capita* income and urbanization. According to FAO statistics, in 2005 the average African citizen consumed about 11 kg of meat per year and 35 litres of milk. This is projected to increase to 26 kg of meat and 64 litres of milk by 2050. The population is also set to more than double within the same period.

This growth in demand provides a huge opportunity to alleviate poverty and promote economic growth. Beyond the direct impacts on the lives and incomes of rural livestock keepers, growth in this sector will create employment, reduce prices, support the emerging processing industry and increase the supply of organic fertilizer. Being able to eat meat and dairy products more often will boost the health and nutrition of rural and urban families. Milk is particularly valuable for the nutrition of children and offers a wide range of processing opportunities.

It is important to note that improved smallholder farms and large-scale commercial operations can play complementary roles in bringing about African livestock transformation. Large-scale specialized farms and processors can act as innovation leaders, providing examples or demonstrations that act as pull factors for productivity improvement in smallholder systems.

**Success stories**

The African Union’s Inter-African Bureau for Animal Resources (AU-IBAR) has formulated an African livestock development strategy to fast track policy reform and productivity improvement. This provides an opportunity to build consensus, mobilize stakeholders and establish strong coordination and partnerships to drive livestock sector transformation.

The International Livestock Research Institute has supported Ethiopia’s Ministry of Agriculture in livestock development planning through dynamic herd and sector models and creating a national Livestock Master Plan. This includes five-year implementation strategies. The Ethiopia team is supporting a similar initiative in Tanzania, and plans are being discussed to develop master plans for Cameroon, Kenya, Rwanda and Uganda.

**[box]**

**A sustainable livestock future**
The African Livestock Futures study projects upcoming levels of production, consumption, prices and trade for different animal products and estimates the impacts of increasing production on key environmental parameters. It also discusses competitiveness in global markets, the future roles of smallholders and pastoralists, and potential disease considerations. It concludes with policy recommendations for realizing the potential of livestock as an engine of economic growth, food security and environmental sustainability in sub-Saharan Africa.

(See: http://un-influenza.org/sites/default/files/alf/LiveStock_Report_ENG_20140725_02_web.pdf)

The way forward
Development of the livestock sector needs to occur through a strategy of sustainable intensification. This includes increased provision of services, inputs, appropriate institutional support and markets, all of which are essential to transform livestock operations and industries to become more commercial. Participants in the work stream session endorsed the following proposed goals for livestock development to be achieved by 2020:

- At least a doubling of livestock production or output, helping to ensure food security for the first time.
- Halving of domestic livestock product prices, thus contributing to food security and poverty reduction.
- Doubling the contribution of livestock products as inputs into domestic industrial sectors, e.g., retail food services.
- Doubling the exports of live animals and meat, dairy and other livestock products, leading to a doubling of foreign exchange earnings.

These goals will be achieved by adopting the following approaches:

- Increase production and productivity in a cost-effective and environmentally sustainable way by improved feeding, health and reproductive management.
- Improve the quality of products and focus on value addition with priority given to the dairy, red meat, poultry and pork value chains.
- Adopt a regional approach, with technology and policy solutions geared to the sustainable development of natural resources and market opportunities. Take a dual approach to strengthening both smallholders and large production schemes in an integrated and equitable production value chain.
- Put in place and enforce policies and regulations that attract private and public investments.
• Strengthen the capacity of producers, producers’ organizations and public institutions and develop rural infrastructure with a particular focus on water supply.

Work stream 24: Agricultural mechanization

Quotes:
“Now is the time to send the hoe to the museum.”
“All elements of the machinery supply chain need to work together.”
“Mechanization strategies need to be customized – while Senegal is flat, Rwanda is the country of 1 000 hills.”
“We need to invest in technology that works for women as well as men, or there will be bottlenecks.”

Setting the scene
In the African context of ageing farmers, fragmented land holdings and future industrialization, smart farming and particularly mechanization are key to keeping the youth – who are the future of Africa – working in agriculture. Mechanization both gains more from the existing land and offers the potential to expand the land area under production. And beyond tractors, mechanization is vital at every stage of the value chain up to value-addition and markets.

Opportunities
As well as expanding the area under cultivation, mechanization offers the ability to perform operations at the right time to maximize production potential; provides multi-functional machinery not only for crop production but also for transport, stationary power applications and infrastructure improvement (drainage and irrigation canals, roadworks); compensates for seasonal labour shortages (and releases labour for more productive work); and reduces the drudgery associated with manual agricultural labour.

Mechanization can work within, rather than against, FAO’s Save and Grow paradigm of environmentally sustainable crop production: for example, land cultivation plays a major part in conservation (‘no-till’) agriculture by maintaining and improving soil structure.

However, the scope of the overall challenge is great – Africa has over 3 billion ha of arable land – to utilize 50 percent (at 1.2 kw/ha) would need 24 million tractors to adequately mechanize agriculture in the continent.

Success stories
In Nigeria, the deployment of Agricultural Equipment Hiring Enterprises (AEHEs) is being achieved through the government-enabled Private Sector-Driven Agricultural Mechanization for Farmers (PSDAMF) programme. The programme also offers mini-mobile-AEHEs specifically targeted at young farmers and entrepreneurs. PSDAMF is a public–private partnership involving the Federal Ministry of Agriculture and Rural Development, agro-machinery vendors/manufacturers’ representatives, financial institutions and service provider operators. Together they set up networks of AEHEs in demand-driven locations nationwide to offer affordable mechanization services such as leasing/hiring of agricultural equipment for land preparation, harvest and post-harvest processing. The short-term projection of the scheme is to make available, between 2014 and 2016, a minimum of 6 000 units of tractors and power tillers as well as about 13 000 units of various harvest and post-harvest equipment, to set up a minimum of 1 200 AEHEs. The financing is in partnership with the Bank of Agriculture (BOA) and private sector players. The government provides 35 percent of the loans, BOA provide 35 percent, the agro-machinery vendors 10 percent, and service provider operators provide 20 percent equity to off-take the centres.

Other parts of the world, such as Asia, have achieved successes through a system of one-stop shops – regional centres of agricultural mechanization, offering mechanical, chemical, financial and agronomic support. A good model is the work of the Asian Centre for Sustainable Agricultural Mechanization (UN-CSAM). Such centres may also include educational facilities, such as AGCO’s Future Farm Concept, piloted in Zambia, which offers smallholders courses in best practice, with a focus on women and youth.

National mechanization committees are also a successful model in some countries. Scale-up and agglomeration through local cooperatives is vital for small-scale farmers to gain access to both equipment and financial services, and to benefit from economies of scale. Asian countries have many machinery cooperatives, whereas cooperatives in Africa tend to be commodity-based. A specific focus on youth cooperatives, as in the Nigerian PSDAMF programme, will help to keep young people enthusiastic about staying in agriculture.

There needs to be a shift from a focus on assets to the viability of the business case (key issues here are land tenure, and finance and security; see Work Stream 5) – including appropriate business models for smallholder mechanization.

Some specific suggestions to facilitate financing of mechanization include the removal of all import taxes on mechanical equipment (this has worked in the ICT sector); farm labourers who become unemployed due to mechanization could be encouraged to become servicers and spare-part manufacturers; specific innovative financial products
need to share the financial load between all parties in the value chain (e.g. including percentage equity from equipment vendors).

[box]

**Tracking tractors**
In Nigeria, through the mobile wallet technology (see Work Stream 5), tractors made available via loans to farmers can be tracked and monitored to ensure the funding provided is used by the right people, and in the right way. The farmer provides a deposit of 30 percent and receives a 70 percent loan. A tracker on the tractor can monitor its location and speed, and the number of hours worked. When a pre-set number of hours is reached, the tractor signals that it needs a service with a pre-arranged provider. If the service is not carried out, the tractor can be disabled remotely. Using this scheme, there has not been a single default.

[/box]

**The way forward**

- AfDB should create an African Global Mechanization Intervention Fund to enable in-country governments to implement the AEHE model and other mechanization programmes by reducing interest rates. Lower interest rates will allow leveraging of funds from the commercial banks, which will on-lend to private tractor service providers at single-digit interest rates and for longer terms. Commodity exchanges must be involved because with forward contracts the marketing constraints can be overcome. Guarantee Funds should facilitate farmers’ access to mechanization and equipment.

- The Bank should formulate a mechanization policy and strategy for the continent, the Regional Economic Communities and for each country. The country strategies should be within the country’s agricultural transformation agenda. The agricultural mechanization strategies should be integrated into the existing policy frameworks with increasing participation of the private sector.

- AfDB should support African fabrication/manufacturing companies. Agricultural mechanization involves more than tractors – it includes pre-planting and post-harvest handling of produce. All crops, livestock, poultry and dairy must be considered in any agricultural mechanization strategy. Support is needed for local institutions that conduct training and capacity building to ensure after-sale services to the machines and equipments.

- Regional Networks of mechanization services should be supported to pool resources and reach economies of scale, allowing the private sector to deliver services across countries within a region.

**Work stream 25: Strengthening Institutions**
Quote: Only strong national agriculture institutions run by dedicated professionals can sustain the programmes that are needed to grow the continent’s agricultural sector and create prosperity for all.

**Setting the scene**
For efforts aimed at transforming agriculture in Africa to be successful, well-functioning institutions will be critical, from farm to national levels. Strengthening institutions for agricultural transformation in Africa involves nurturing and harnessing strategic leadership at all levels. This covers a whole range of sectors, including the delivery of key inputs, resources and services, both for modernizing agriculture and for product transformation, as well as for ensuring that outcomes are distributed equitably among the various groups of actors. Although considerable, the investment required is likely to pay off, not least because the alternative course of action – or inaction – risks being far more costly in the long run.

**Opportunities**
Opportunities offered by strengthening African agricultural institutions can be seized by adopting a two-pronged approach that involves modernizing the system of agricultural production and transforming agricultural products to achieve higher revenues and better job opportunities. One of the most effective approaches has been shown to involve building agricultural value chains, and there is massive scope for these to be further developed in Africa, or for existing ones to be redesigned and broken ones to be fixed.

Specifically, opportunities for modernizing African agriculture revolve around boosting production through higher crop yields, rather than, as has mainly been the case hitherto, by increasing the area of land cultivated, and by encouraging the transformation of agricultural products. Currently, Africa exports the bulk of its products unprocessed, as raw materials, missing out dramatically on higher profit margins. For example, instead of exporting raw cocoa beans, why not earn value addition by transforming them into chocolate?

Strengthening agricultural institutions will be central to this process of transformation – and although not easy, there is evidence that it can be done, with far-reaching impacts on food production and livelihoods.

With the support of well-run institutions, Africa has the potential to increase the value of its annual agricultural output by 300 percent, from US$280 billion to $800 billion by 2030. Demand is strong and growing, especially from the continent’s own rapidly growing urban populations. According to World Bank projections, African urban food
markets are set to increase fourfold by 2050 to a value of US$400 billion. Supplying these markets through efficient value chains will have a substantial impact on jobs, incomes and livelihoods.

Success stories

- In order to unlock key technical and systemic problems, Ethiopia established the Ethiopian Agricultural Transformation Agency (ATA) in 2011. Ethiopian ATA has developed a lot of important strategies whose implementation led to the proper management of its natural resources, revitalized the agriculture agenda by making it market-led, strengthened the extension system and scaled up best practices. Ethiopian ATA reached over 4.4 million smallholder farmers, with technologies prioritized by the Transformation Agenda, who have applied these technologies on nearly 2.2 million hectares of land.

- A number of value chains in Africa - for example in Kenya (cut flowers, green beans) - show the impressive results that can be achieved if the right institutions are in place.

The way forward

Institutions needing strengthening may involve a wide range of actors, including public/government bodies (such as sector ministries, agencies of inputs supply and distribution, research and extension organizations, financial institutions such as government-owned and operated banks), non-government institutions (including private sector operators such as agro-dealers, financial institutions such as private banks), farmers’ organizations, producers’ cooperatives, community-based organizations and civic society organizations, such as youth groups and women’s organizations.

Farmers’ cooperatives can be transformative institutions for both modernizing agriculture and product transformation. Operating as small businesses, ‘micro’ share companies could be created and expanded in rural areas. These would be run by local people, particularly youth and women. This approach can help to create economies of scale, by organizing farmers to supply market outlets in a timely, reliable fashion.

Strengthening public institutions, and the impact these have on policies for agriculture, will require a U-turn on previous approaches, which allowed the neglect and marginalization of rural spaces. For example, road density in Africa is 2.5 times lower than in Latin America and six times lower than in Asia – with transport cost per km averaging almost two to three times that of developed regions. A similar picture can be seen in the case of power, water, telephone and internet services, and this clearly has a knock-on effect on productivity and competitiveness.
As a first step, there is an urgent need to gather home-grown data to map problem areas for farmers, producers and marketers. It would also be useful to identify and highlight cases of transformative leadership - where encouraging results have been achieved and leadership has made a difference. Setting up an annual review of transformative progress should lead to recognition for those who have been effective and achieved positive outcomes. The capacity needs of actors and players should be addressed whenever possible.

Tapping into Africa’s massive and growing domestic markets can be achieved by forging stronger regional economic integration, and by linking cities to their hinterland to ensure efficient supply channels of agricultural products.